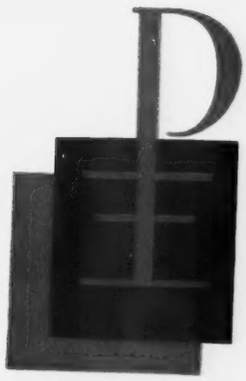


PRINTING EQUIPMENT ENGINEER

DECEMBER • 1934

A TECHNICAL PUBLICATION FOR MECHANICAL EXECUTIVES RESPONSIBLE FOR PRINTING PRODUCTION, EQUIPMENT AND SUPPLIES IN THE COMMERCIAL, MAGAZINE, PRIVATE PLANT AND DAILY NEWSPAPER FIELDS

SKF EQUIPPED

BUILT BY

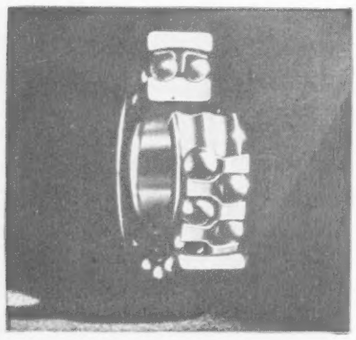
HACKER MANUFACTURING COMPANY

PROOF OF SKF DEPENDABILITY IN PRESS PERFORMANCE

PROOF of bearing performance is "run off" under the press of time! Any engineer will tell you that! And Hacker engineers say that they have seen proof of SKF performance throughout 20 years in power presses and other proofing equipment!

Take 19 SKF Bearings on this No. 6 Power Press bed and cylinder, for instance! Each gives the same dependability that characterizes quality printing in high-speed newspaper presses! Each is free from any necessity for adjustment or trouble! Each contains a full measure of precision and reliability! There's no question about it! SKF play an important part in the job from the moment a sheet is slipped under the rollers until after the impression is made! And *always* they have that one SKF quality that you can rely upon . . . dependability!

● *You may buy a bearing as a bargain but try and get a bargain out of using it, for nothing is apt to cost so much as a bearing that cost so little*

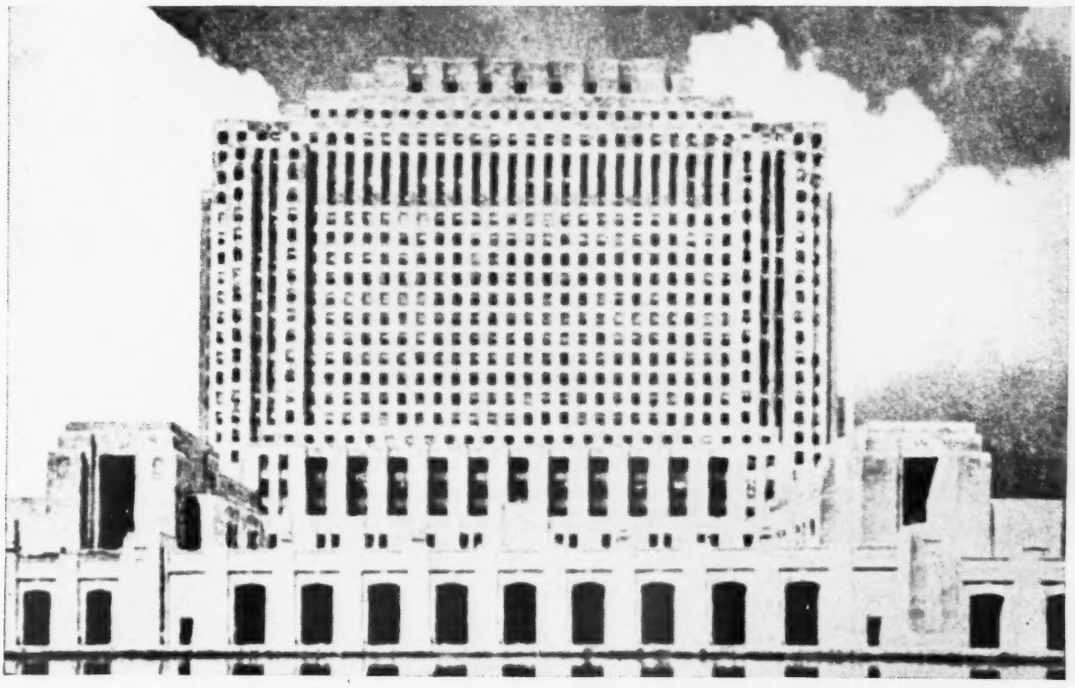


SKF INDUSTRIES, INC., FRONT ST. and ERIE AVE., PHILADELPHIA, PA.

SKF

Ball and Roller Bearings

DON'T MISS an IMPORTANT OPPORTUNITY



THE CHICAGO DAILY NEWS

The Stahi AUTOFORMER is a valuable aid to Quality Printing on The CHICAGO DAILY NEWS. Day after day, for 29 months the sturdy AUTOFORMER effects Uniform Casting Levels on each and every mat, in the Astonishing Time of 58 Seconds.

With the New Importance of Better Quality Printing, The AUTOFORMER becomes a Key Machine, because of Superior Casting and Printing Levels effected, which will give full benefits of Operating Economy.

Many Newspapers HAVE LOST AN OPPORTUNITY for real savings through lack of Standardization of Dry Mat Routine, which The AUTOFORMER provides. Mechanize your dry mat routine, eliminate multiple hand operations, utilize mechanical energy, with the astonishingly successful AUTOFORMER.

STAHI NEWSPAPER SUPPLY COMPANY, Inc.

1020 Crocker Street, Los Angeles, Calif. Oregonian Building, Portland, Oregon

{ AGENCIES }

THE GOSS PRINTING PRESS COMPANY
Chicago, New York, San Francisco

WOOD FLONG CORPORATION
Hoosick Falls, N. Y.

SOUTH AMERICAN AGENTS
A. M. Carneiro & Company
152 W. 42nd St., New York, N. Y.

CERTIFIED DRY MAT CORPORATION
342 Madison Avenue, New York, N. Y.

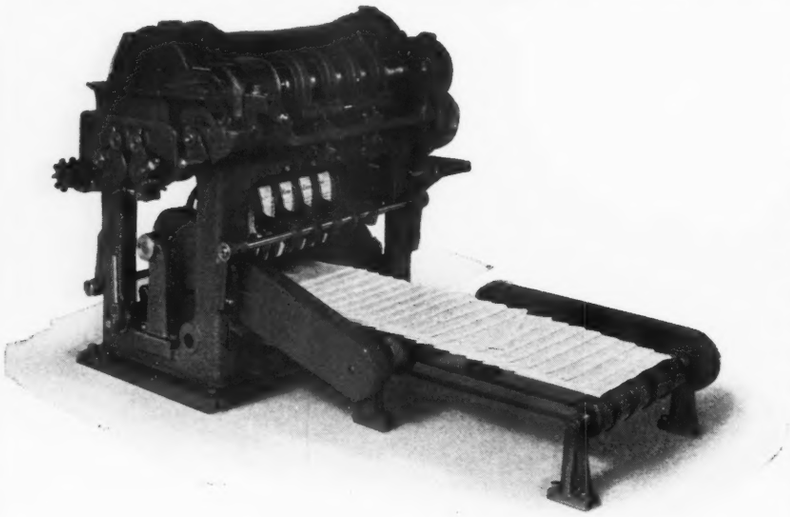
TORONTO TYPE FOUNDRY COMPANY, Ltd.
Toronto, Canada

EUROPEAN MANUFACTURERS
The Goss Printing Press Company of
London, England

The World's Fastest Newspaper Folder

THE WOOD STEEL FOLDER is not only the world's fastest folder — it has been run successfully as fast as 81,000 newspapers an hour — but it is the most accurate. Besides, it is unbreakable.

Also, it is equipped with a unique device which insures it against chokes when a conveyor breaks down and fails to carry away folded products. While relieving the folder of conveyor chokes this device also stops the press and arrests further waste of newsprint.



Now that the Wood Steel Folder has been put upon a low-cost quantity-production basis, it is within the reach of every up-and-coming newspaper. As it is unbreakable it need not be installed in pairs, one standing by for the other. Where but one delivery is required, one Wood Steel Folder will do.

Simple, Sturdy, Dependable

Single Wood Steel Folder with Two Formers, etc.....$ 9,030
Double Wood Steel Folder with Two Formers, etc..... 13,065
Single Wood Steel Folder without Formers, etc..... 5,640
f. o b. Plainfield, N. J.

As this unique folder — there is none other like it — may be used with any press, old or new, it may be worth your while to purchase it to replace the folders of the presses you now have. In any event, it will assuredly be wise for you to order it embodied in the next press, of any make, which you install.

Its users are: ***The New York Times, The Chicago Tribune, The Philadelphia Bulletin, The Cincinnati Times-Star, The London Daily Mail, The London Daily Mirror, L'Intransigeant,*** **Paris,** ***The Philadelphia Inquirer, The St. Paul Dispatch, The Boston Record.***

WOOD NEWSPAPER MACHINERY CORPORATION

MAKERS OF FINE NEWSPAPER MACHINERY

Originators of

Automatic Stereotyping — *Modern Fast Newspaper Printing* — *Automatic Web Splicing*

Associate Member

National Printing Equipment Association, Inc.

A Technical Publication for Mechanical Executives Responsible for Printing Production, Equipment and Supplies in the Commercial, Magazine, Private Plant and Daily Newspaper Fields.

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Edited by
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Printing EQUIPMENT Engineer

Trade Mark Registered U. S. Patent Office

Volume 49 *Number 3*

December 1934 Contents

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Share Your Knowledge With Others

The key men in your organization will appreciate looking over the pages of this magazine. Perhaps one of them will be able to put some particular technical idea to good use.

Place a check mark in each square for attention of the department head or assistant whom you wish to look over special articles in this issue.

☐ *Production Manager*

☐ *Foreman Lithographing Department*

☐ *Mechanical Superintendent*

☐ *Superintendent Stereotype Foundry*

☐ *Composing Room Superintendent*

☐ *Superintendent Electrotype Department*

☐ *Superintendent Press Room*

☐ *Chief Composing Room Machinist*

☐ *Bindery Foreman*

☐ *Monotype Department*

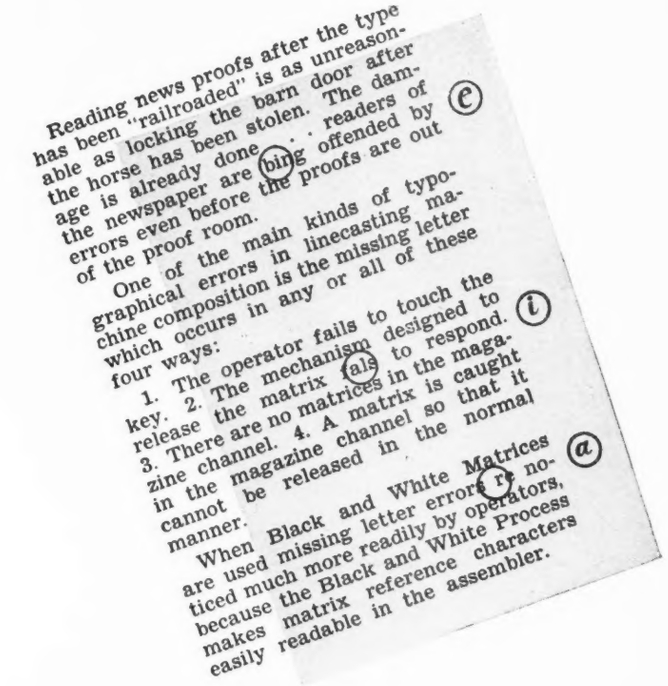
☐ *Manager*

☐ *Photo Engraving Department*

☐ *Purchasing Agent*

Missing Letter Errors

can also be prevented


Reading news proofs after the type has been "railroaded" is as unreasonable as locking the barn door after the horse has been stolen. The damage is already done . . . readers of the newspaper are (bing) offended by errors even before the proofs are out of the proof room.

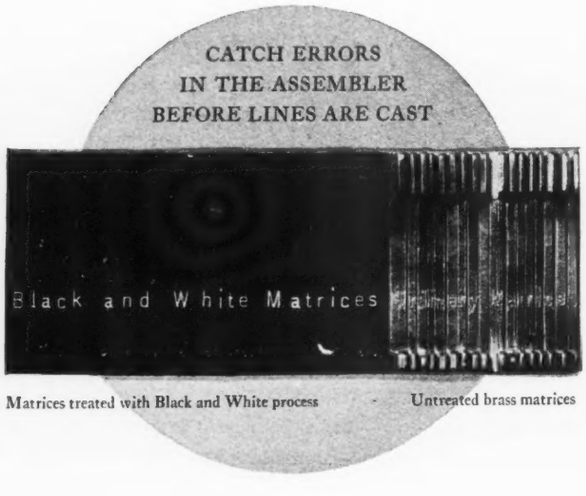
One of the main kinds of typographical errors in linecasting machine composition is the missing letter which occurs in any or all of these four ways:

1. The operator fails to touch the key. 2. The mechanism designed to release the matrix (als) to respond. 3. There are no matrices in the magazine channel. 4. A matrix is caught in the magazine channel so that it cannot be released in the normal manner.

When Black and White Matrices are used missing letter errors (r) noticed much more readily by operators, because the Black and White Process makes matrix reference characters easily readable in the assembler.

*M*issing letters constitute just one of four kinds of typographical errors which can be prevented in original linecasting machine composition when Black and White Matrices are used. The other three kinds are wrong letters, double letters, and transpositions.

Because the Black and White process makes matrix reference characters easy to read, operators can readily detect and correct errors while lines are being set. That is why *Black and White Matrices save more than 50% of all typographical errors* in original composition.



Matrices treated with Black and White process — Untreated brass matrices

This saving in typographical errors is equivalent to a saving of 33% of all errors marked by proofreaders.

Since 12% of all operator time is consumed in the setting of corrections, *a 33% saving of total errors means a 4% saving of total operator time.* In addition, there is the saving in time on the part of proofreaders and floor men in detecting errors and placing corrections.

There is no guess-work about the effectiveness of Black and White Matrices. We *guarantee* a 25% reduction in all errors in original machine composition and *prove this saving* before you pay us a penny.

MATRIX CONTRAST CORPORATION EMPIRE STATE BUILDING NEW YORK CITY

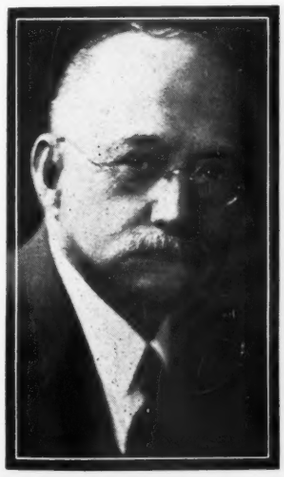
Sole licensees of the Percy L. Hill Black and White Patents Nos. 1,466,437 and 1,796,023

Printing
EQUIPMENT
Engineer

for December 1934

Object of Proper Packing

By ALTON B. CARTY*



Alton B. Carty analyzes "pitch line" and says that the object of proper packing on a printing press cylinder in relation to the height of the form is to produce perfect rolling contact.

EVER since the invention of the printing press, in which a cylinder was used to carry the sheet to a reciprocally moving form for impression, men operating the machine have found that the cylinder packed with a certain relationship to the surface of the bearers would produce satisfactory work, reduce the wear of the form, and overcome in large measure the tendency of the sheet to wrinkle. This result was accomplished without giving thought to what is termed the pitch-line of the cylinder, or even knowing that such a factor existed.

By observing the laws, unconsciously or otherwise, bearing upon the subject of pitch-line, reasonably good printing was made possible. The dictionary defines pitch-line as follows: In toothed wheels, the circle which would bisect all the teeth; when two wheels are in gear, their pitch-lines (or pitch-circles) touch one another; the pitch-line represents the touching of two cylinders rolling upon another, and is the line, or circle, on which the pitch of the teeth is measured; also it is the working surface of two geared bodies.

It is a question if pitch-line is in reality the term that should be used, as pitch-line is supposed to refer only to gears and the laws of mechanics governing their production.

Sometimes the "line of impression" is used in place of pitch-line, but the simile will not apply, as the pitch-line is positive and invariable, while the line of impression might vary on every form, especially when changing from a light to a heavy form, or *vice versa.*

But I am of the opinion the term pitch-line should be accepted as illustrating the point under discussion, and that the surface of the bearers of the impression cylinder should be considered as representing the pitch-line of the gears, which in fact it does.

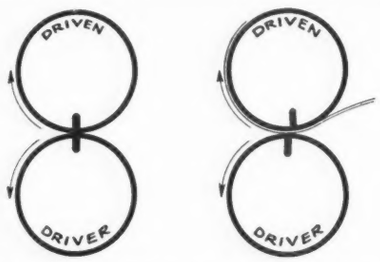
As a practical illustration of the thought in mind, suppose we take two cylinders of exactly the same diameter (neither having gears) and mount them in

NOTE: *The writer acknowledges with thanks the receipt of valuable information upon this subject from R. Hoe & Co., Inc., The Goss Printing Press Co. and The Miehle Printing Press & Mfg. Co.*

*Chairman, Research Committee, Washington (D. C.) Club of Printing House Craftsmen.

such manner so that the upper one may be revolved by direct contact with the lower one. Make a mark of some kind across the face of the end of the two cylinders where they contact. Turn the lower cylinder, and if the diameters of the two cylinders are exactly the same, the mark on each cylinder will coincide with the other at every turn of the cylinders.

If a sheet of book paper is wound around the upper cylinder, the ends of the sheet just touching, and the



Elementary diagram to illustrate the term "Pitch-Line" in a printing press where it is defined as the touching of two rolling cylinders.

At the left are represented two cylinders of equal diameter. The vertical black line intersecting the point of contact of the cylinders represents a timing mark. If the lower cylinder be revolved the timing marks will coincide at every revolution of the cylinders, which shows that the two cylinders are of exact diameter.

At the right are shown the same two cylinders. If a sheet of book paper is wound around the upper cylinder and the cylinders are turned as before, it will be found that the upper cylinder will revolve slower because of its increased diameter and the marks will no longer coincide at each revolution of the cylinder. If gears should be attached to the two cylinders, they would turn in unison at the ends (at the point of contact or pitch-line of the gears) but there would be a drag on the cylinder to which the paper is attached (by reason of the enlarged diameter of the cylinder) and in a short time the paper would be torn away.

In the case of an overpacked impression cylinder, its surface will travel slower than the form so that the rolling movement of the two surfaces is variable, consequently, at the end of a reasonably long run it will be found that the printing surface of the form is worn badly.

cylinders are turned as before, it will be found the upper cylinder will be moving slower because of its increased diameter, and the marks on the ends of the cylinders will no longer coincide.

If the sheet is removed from the upper cylinder and wound around the lower one it will be observed that the upper cylinder without the paper is revolving faster. The reason is apparent, as the lower cylinder will have a greater diameter by the addition of the sheet of paper and will drive the upper one at an increased speed.

If the sheet of paper is 0.003 in. thick then the diameter of the cylinder will be enlarged twice that amount, or 0.006 in.

If gears should be attached to the two cylinders they would, as a matter of fact, turn in unison at the ends, but there would be a drag where the paper is attached, and in a short time it would be torn away.

This is precisely what happens when the packing on the cylinder and the height of the form on the bed of a press, or on a plate cylinder, are not properly correlated.

The surface of an overpacked impression cylinder will travel slower than the form, and cause variation in the rolling movement of the two surfaces. The variation may be corrected somewhat between margins, or at the back end of the form by the pull of the gears, but the pages or units of the form will be found to be worn badly at the finish of a reasonably long run.

When the form is raised above type-high by underlaying, and the amount of packing on the cylinder is reduced below the surface of the cylinder bearers (due allowance being made for the thickness of the stock) the speed of the surface of the cylinder will be increased and the packing, with the makeready sheets, will be crowded toward the gripper edge.

The object of the proper packing of the cylinder in its relation to the height of the form is to produce a perfect rolling contact, and when this relationship is established but little trouble should be experienced with imperfect register, slurs, wrinkles and wearing of plates, and the print from the form will be sharp and clear.

It will be found also when the cylinder is properly packed there will be but little strain upon the grippers, which under the circumstances need only be set sufficiently strong to lift the sheet from the form, instead of a hard pull which would be likely to start a wrinkle and affect the register at the back of the sheet.

For the common run of forms the cylinders should be packed so that the height of the packing, including the stock to be printed upon, would be not more than 0.003 in. above the cylinder bearers. There is no need of using a micrometer to ascertain this amount of thickness. A thousand sheets of tissue paper will measure one inch in thickness. Therefore, each sheet will be 0.001 in. thick, and three sheets will be 0.003 in. thick. On a very heavy form the packing may be 0.006 in. above the surface of the cylinder bearers.

The surface of the sheet to be printed does not represent the pitch-line, but the point of the extreme depth of the impression does. It will be accepted that the degree of impression will show slightly upon the back of the sheet, and it is that depth that indicates the pitch-line for a type-high form.

The cylinders on newspaper presses are usually turned down on the side 1/8 in., which is equal to 0.125 in. and, as the blanket thickness recommended is 0.146 in., 0.021 in. is left for impression and wear. When the cylinders are set it is recommended an impression of 0.010 in. be allowed, which will provide 0.011 in. wear before the gears are upon the pitch-line. This relation becomes necessary because of the heavier impression required on newspaper presses.

On one make of newspaper press where the printing diameter is 15 in., and where the cylinders are cut down to 14.703 in., with allowance of 0.083 in. for the bottom blanket and 0.093 in. for the top one, new blankets will measure 0.0275 in. from the pitch-line of the gear. These sizes allow for the blanket wearing down, and when they wear or beat down, below the pitch-line diameter of 15 in., it is customary to replace them.

Continued on page 20

Addendum:

Since publication of the 1935 Printing Equipment and Supplies Catalog Number, some errors and omissions have been brought to our attention. These have been grouped together and are printed below in the same style as the original index. Please transfer this Addendum to the main index in the November issue of *Printing* EQUIPMENT *Engineer* for reference purposes.

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Dixon, Joseph, Crucible Co., Jersey City, N. J.
(The Joseph Dixon Crucible Company, Jersey City, N. J., is listed as "Manufacturer of Electric Sheet Heaters, Vacuum Sheet Cleaner, Ink Distributor and Vibrating Rollers." The Joseph Dixon Crucible Company does not make any appliances as listed above but do manufacture Graphite in all forms and mold polish for composing machines, as well as belt dressing.)

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Huber, J. M., Inc., Tenth Ave. at 34th St., New York City — *b-f-g.*

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(The Tesch Mfg. Co. was erroneously listed under the heading of "Saw Grinding Machinery." The Tesch Company makes saw filing equipment.)

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b. Brass
c. Casting Machine Matrix
d. Metal Foundry
e. Steel
f. Wood
g. Borders

Damon Type Foundry. See American Type Founders Sales Corp.

***KRAUSE, KARL, U. S. CORP., 55-57 Van Dam St., New York City** — *b*..... 101**

No Truth in Rumor

Bruce Berckmans, Manager Ink Division, J. M. Huber, Inc., informs *Printing* EQUIPMENT *Engineer* there is no foundation in the rumor that the printing ink interests of the Huber family are to be sold to or merged with any other organization.

Members of the Huber family have manufactured printing inks for more than 154 years and in addition to these interest, have expanded into the carbon black industry, the product of which is supplied to the rubber, paint and ink industries. The Huber Pigment Co. supplies clay to both rubber and paper industries. The Huber Petroleum Co. produces gasoline and mineral oil vehicles to a number of industries besides supplying the ink requirements of J. M. Huber, Inc.

Giant Caster Faces

The Lanston Monotype Machine Co., 24th at Locust St., Philadelphia, Pa., has issued a hanger printed on substantial paper, showing 86 one-line specimens of type faces, including those of latest design. The hanger may be obtained from the Monotype Company at the address given above. It is intended for distribution in the trade and in schools of printing and design.

Mechanical Executive Dies

Harry Fossenkemper, who was in charge of the pressroom of The Nicholson Printing Company, Richmond, Ind., died recently after a protracted illness.

He had been with the Nicholson Company for more than twenty years. Among his practical inventions was the "practical chase lock" which is used to lock forms on cylinder press beds.

Mr. Speyer, K. G. (Doc) Laycock Is Paging You

Indicates Red Plates

Indicates Blue Plates

Reproduction of double truck bleed page advertisements. The method for printing was devised by K. G. (Doc) Laycock, foreman of the Wilkes-Barre (Pa.) Times-Leader *pressroom. The color plates were made and registered without photoengraving by using Mr. Laycock's method which he described in the August, 1932* Printing Equipment Engineer.

The black plates were offset on the blanket cylinder in order to provide a means of transferring the design to the solid plates which will later become the red plates. In order to obtain the red plates, the black plates are removed and two pairs of solid plates butted top and bottom. The design from the black plate which has been offset previously on the blanket cylinder is now transferred to the solid plates which are afterwards removed. Parts of the design which are to be printed in red are now outlined by hand just as an engraver would tool a halftone. The balance of the plates i. e., the nonprinting areas, are routed off on a curved plate router in the regular manner. The blue plates were obtained through the same process.

K. G. (Doc) Laycock, foreman of the Wilkes-Barre (Pa.) *Times-Leader,* has worked out a method for producing and printing newspaper double-truck bleed pages.

George W. Speyer, production manager of the J. Walter Thompson Co., Chicago, Ill., made a suggestion at the St. Louis A. N. P. A. Mechanical Conference that mechanical executives endeavor to find a way to print bleed page advertisements in daily newspapers. His comments stirred up considerable activity among mechanical executives in various parts of the country. In the August, 1934, *Printing* Equipment *Engineer* were printed several reproductions of newspaper bleed pages which were produced in response to Mr. Speyer's suggestions. Since that time we have received specimens treated in various ways and printed in one or more colors and black.

We believe, however, that the first double-truck bleed-page advertisement to be printed is that produced by K. G. Laycock and associates in the plant of the Wilkes-Barre (Pa.) *Times-Leader.*

In the original (shown here in miniature) the two red plates join in the center vertical fold. The joint is noticeable only by spreading out the two pages flat. The horizontal joint in the red plate scarcely can be seen except on close inspection. It is located approximately 1¾ in. from the bottom edge of the plate and does not overlap or "gap." As will be seen from the accompanying reproduction, the blue and black plates do not bleed.

Mr. Laycock described in the August, 1932, issue of *Printing* Equipment *Engineer* a method for making color plates without photoengraving. This double-truck bleed page was handled in a similar manner and

is described as follows: The double-page ad is set just the same as for black printing. Plates are cast in the regular way with the exception that the plate on the center ring side is a margin greater in width than the other side. Six plates, each having a solid face, are cast blank from a sheet of tag board, using the double ring in the casting box. The plates are cut half the width of half-width paper roll.

The black plates are put in position without paper in the unit on the plate cylinder down one inch from the head-stop and a proof is struck on the press blanket, after which the black plates are removed. A pair of the solid double plates are then put on the cylinder against the head-stop. Move the cylinder around part way and apply another pair of solid doubles butting closely at top and bottom. The plates will be locked in the usual way except that a pair of head-stops have been removed. The inked impression which has been previously printed on the blanket offset on the solid plates. The solid plates upon which the transfer has been made, are now removed. Parts of the design which are to be printed in red are outlined on the solid plates by hand just as an engraver would tool an outline halftone. The waste portions are then routed off in the regular way. The blue plate design is obtained in a manner similar to that used in producing the red plate.

This method produces plates which coincide with the roll width. The red plates were routed straight across top and botton for proper page depth.

Ernest G. Smith, president of the Leader Publishing Co., states that outlining the plates consumed eight hours and the routing required five hours.

The original double-truck bled-edge advertisements were printed on a Hoe octuple super-speed unit and can be printed in the *Times-Leader* plant only on collect runs.

Mr. Laycock said that the printing is done on a half-width roll on one side of the press, outside of the center line and is then angled to the other side and back in line with the folder.

MR. EXECUTIVE:

How did you like our 1935 Printing Equipment and Supplies Catalog Number?

While we have received a great many comments, critical and otherwise, we invite further suggestions from our readers.

This Catalog was printed for your personal use. Perhaps you can tell us whether you like it or how we can improve the next issue.

Ulac Sinclair

Editor.

Rollers From Synthetic Resins

Investigational Work Done on Rollers to Date—Properties of Du Prene As A Sleeve Material Over Rubber Base

By A. L. FREEDLANDER*

As a result of developmental work in the roller field, Mr. Freedlander presents his conclusions in a paper delivered before the Printing Industries Division Conference, American Society Mechanical Engineers, held in Philadelphia, October 8-9.

A.—INTRODUCTION—A SYNTHETIC RESIN DEFINED

A SIMPLE definition of a synthetic resin is difficult. According to Ellis (Synthetic Resins and Their Plastics—Chemical Catalog Company—1923), "strictly speaking the term synthetic resins no doubt should apply solely to resinous productions which have been derived primarily from non-resinous raw materials by synthetic means."

However, this does not cover the commonly accepted use of the term, and answers by chemists for a definition vary so widely as to make it impossible to arrive at an answer that would be satisfactory for this paper. "This is due to the fact that natural resins exhibit so wide a range of variation that it is difficult to fix precise limitations."

However, for the purposes of this paper, the above explanation will, we believe, give us a wide enough latitude to include all the substances we shall discuss and still come within the title of this paper.

B.—COMMERCIAL SYNTHETIC RESINS USED IN ROLLERS, THEIR ADVANTAGES AND LIMITATIONS

According to Ellis, until the commercial advent of the phenol-formaldehyde resins (of which the well-known

Continued on page 21

*Vice President, The Dayton Rubber Manufacturing Company. Discussion by W. S. Robinson, Manager, The McCall Company, and E. R. Bridgewater, Manager, Rubber Chemicals Division, E. I. du Pont de Nemours & Co. Abstract of paper presented at the Fifth Conference of the A. S. M. E. Printing Industries Division, Philadelphia, Pa., October 8-9, 1934.

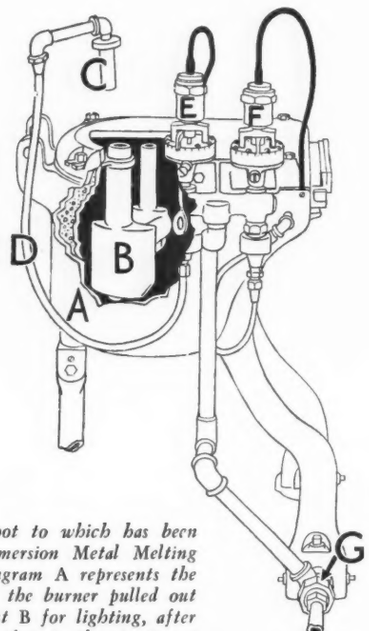
Composing Machine Metal Melting

New Equipment Heats Metal in Pot Crucibles By Means of Thermostatically Controlled Immersion Burner

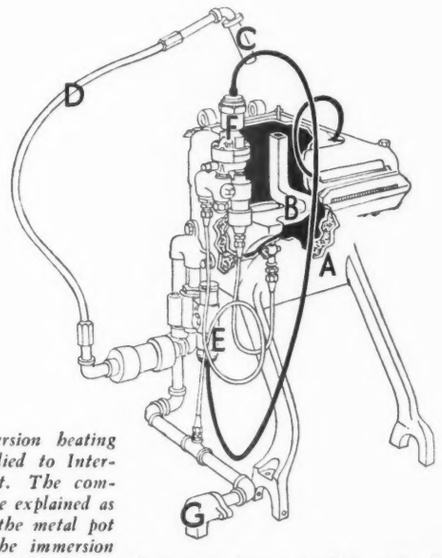
By Staff Writer

Immersion metal melting with gas is now possible for Linotype and Intertype metal pot crucibles, according to the latest announcement of the C. M. Kemp Mfg. Co., Baltimore, Md. The new equipment is a further development of the Kemp principle of gas immersion metal melting for stereotype pots.

For an understanding of gas immersion metal melting it is necessary first to consider that this is fundamentally a problem in burning gas in an enclosed heating element submerged below the metal surface and within the crucible or stereotype pot, hence, "inside the metal, not outside the pot." This is accomplished by means of premixing gas and air. This premixing is done by a carburetor, which delivers to the burners a combustible mixture, requiring no secondary or inspirated air for complete combustion and provides a self-supporting flame that will burn not only shut off from outer air, but is actually employed in various industries for direction solution heating. In other words, it is a flame that actually burns immersed in liquids.



A Linotype metal pot to which has been applied the Kemp Immersion Metal Melting Equipment. In the diagram A *represents the metal pot jacket;* C *is the burner pulled out from immersion element* B *for lighting, after which it is returned to place in the opening at the top of immersion element* B; D *is a flexible gas-feed line and* G *is a swing joint which permits the metal pot to move forward or back during casting operations; metal temperature in the crucible is regulated by the thermostatic fuel valve* E; *the mouthpiece temperature is controlled automatically by the thermostatic fuel valve* F.



Kemp Immersion heating equipment applied to Intertype metal pot. The component parts are explained as follows: A *is the metal pot jacket;* B *is the immersion which is submerged in the metal;* C *is the burner (pulled out for lighting), after which it is inserted in the opening in the top of the immersion element* C *to heat the metal in the crucible;* D *is the flexible gas feed line;* E *is the thermostatic fuel valve controlling flow of premixed gas to immersion element* B; F *is the thermostatic fuel valve controlling the mouthpiece burner flame;* G *is a swing joint which permits movement of the metal pot* A *during casting operations.*

The premixing of gas and air to provide a fuel to melt the metal, the method of distributing heat in the crucible, the feature of a specially designed ribbon-flame burner for the pot crucible mouthpiece, and the independent thermostatic control for the two burners are salient features of the Kemp line-casting metal melting equipment.

It is claimed that the Kemp Immersion Heating system utilizes gas fuel in three ways:

1. Accurate homogeneous proportioning, as effected by the automatic Industrial Carburetor, eliminates excess air and unburned gas, making it possible to extract all the usable heat in the fuel.

2. The crucible is completely jacketed by insulating material which stops the flow of cold air around the crucible, giving it vaccum-bottle resistance to external heat transfer, especially when the crucible is merely holding temperature, that is, when the machine is not being worked.

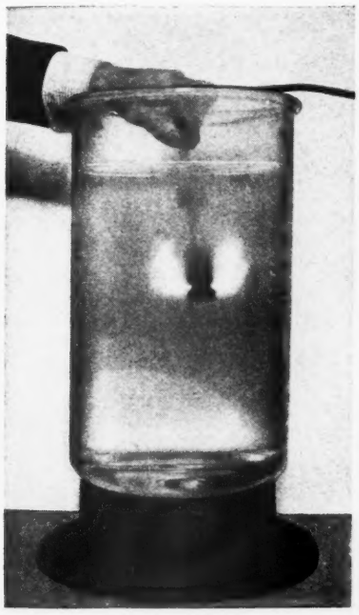
3. By applying the heat inside the pot directly to the metal without heating through the crucible wall.

Automatic control of mouthpiece temperature as well as for the crucible metal temperature is provided by two separately adjustable thermostats. A specially designed ribbon flame burner for heating the mouthpiece is provided. It is so constructed that just enough heat is delivered at either end with a diminished amount at the center to give the distribution of heat Linotype and Intertype engineers have determined makes for best operation. Either automatic tempera-

ture controls are also readily adjustable at the operator's will.

It is claimed by the manufacturer that the internal application of heat relieves the crucible of all strain so that the metal pot crucible will not crack when starting to heat from cold. Good working conditions are maintained since no carbon monoxide is formed in the burning of the Kemp mixture. Heater capacity is provided to permit casting at the highest rate at which the machine can be operated. Proper temperature is maintained regardless of operating speed and temperature variation is practically eliminated by radiating heat over a large element surface, thus avoiding all possibility of localized heating.

The Kemp Industrial Carburetor which provides the gas-air mixture to the heater elements is an independent unit and is made in various capacities, so that a single machine may supply not only a battery of line-casting machines but will take care of stereotype heating as well.



To burn a gaseous fuel in a completely enclosed chamber it is necessary to premix *with the fuel the air necessary for combustion. Kemp Immersion Metal Melting for printing metals is based upon the method for the controlled premixing of gas and air. Illustrative of premixing is the ability of the Kemp flame to burn immersed in water. Premixing is accomplished by means of the Kemp Industrial Carburetor in which gas from the gas company's meter flows through pipe and valve to the inlet governor. This governor is set to discharge at zero pressure. Regardless of pressure variation of the incoming gas, fuel will always be delivered to the proportioning valve at atmospheric pressure. Air from the room atmosphere is drawn through the air filter by the suction of the turbo-compressor. The air and gas, proportioned by the setting of the mixture adjustment screw, enter the turbo-compressor, is mixed and boosted to a positive pressure adequate for combustion purposes in the immersion and pot crucible mouthpiece burners on the line-casting machine.*

As has been stated previously, two separate adjustable thermostats control the temperature of the metal in the pot, as well as the temperature of the pot crucible mouthpiece and adjacent area. Both thermostats are of the mercury-actuated diaphragm type which, in the case of the pot crucible, consists of a flexible steel tube connecting a mercury reservoir located beside the immersion burner in the bottom of the crucible, while the reservoir controlling the ribbon-flame mouthpiece burner is located in the crucible throat. As the temperature rises in the crucible, the mercury rises in the tube, building up pressure on a diaphragm that controls action of the gas valve as the heat increases, and conversely, opening the valve as the temperature drops.

A special bulletin, "Immersion Melting for Linotype and Intertype" will be sent on request by The C. M. Kemp Mfg. Co., 405 E. Oliver St., Baltimore, Md.

Technique In Halftone Printing

Of Prime Importance to Successful Conclusion of Job—Preliminary Scientific Makeready Assures Results

By ROBERT F. SALADE*

Introducing to our readers Robert F. Salade of Philadelphia, well-known writer on technical subjects in the printing industry.

HERE is an actual case which proves that scientific makeready work is necessary for long runs of halftone process color printing on cylinder presses, if the best possible results in the printing are to be maintained throughout the run:

The job was a large catalog, containing on its pages many medium-size halftone illustrations printed in four-color process—yellow, red, blue and black. The stock was supercalendered paper; the run extending into hundreds of thousands of color-printed sheets. Nickeltype duplicates were made of each original halftone plate. For each color form, the proper nickeltypes were attached to a patent plate-mounting system. The key-plate forms were, of course, the ones containing the plates for black printing, and press proof-sheets were printed from these key-forms, to be used in obtaining true register of the various color plates in the other forms. Etched chalk relief overlays were made and used for all halftone plates. The printing was produced on a large two-color flat-bed cylinder press, yellow and red forms printed at one operation; blue and black forms printed at another operation, the latter two colors printed over the first two colors.

Startling to say, the completed catalog turned out to be a spoiled job! Nearly all the color printing was badly out of register, and all the printing was poor. The whole trouble was due to two causes, i. e.: 1. All the color plates had moved

*Author, Editor and Technical Writer, Philadelphia, Pa.

slightly out of register during the long runs. 2. The halftone overlays had also shifted slightly and their relief detail had been damaged through the plates moving out of their correct positions. The customer refused to accept the work and immediately sent the order to another printing firm known to be skilled in the production of the finest halftone process color printing of all kinds. First, it was necessary to purchase new sets of both original halftone color plates and nickeltypes. The customer was quite willing to pay the increased cost for the new job.

In the other printing plant, a craftsman in modern methods of color printing was put in full charge of the catalog job. This pressman first had all the key-plate forms imposed and lined up on plate-mounting systems. Then, before printing register sheets from the key-plate forms, each of these forms was placed on a flat-bed cylinder press; a hard, smooth packing was put on the impression cylinder; then (without any ink) several hundred impressions of the form were taken on the impression cylinder. This action was for the purpose of impressing the nickeltype key-plates in firm, solid positions on the plate mounting system. The next step was to print a quantity of register sheets from each solid from key-plates; then these forms were placed in racks for later use. In the meanwhile, proofs of all the plates had been taken, individually, on sheets of special stock, for chalk relief overlays, and another pressman attended to the work of etching the overlays, so as to have them ready for use when needed.

With the aid of large sheets of water-clear gelatin, printed with a final impression (in black ink) from the key-plate forms, the various forms of color plates were pre-registered with the key plates as accurately as possible. Then, each form of color plates was placed on a two-color flat-bed cylinder press; a regular hard packing was arranged on each impression cylinder; then (without ink) several hundred impressions were taken from each form in the proper order, on the packing of the cylinder. As previously explained, these bare impressions were for the purpose of forcing the plates into firm, accurate and permanent positions on the plate-mounting system, before attaching overlays and other makeready, and before each run of printing was started. At intervals, during each series of bare impressions, the press was stopped; the surface of the plates was inked with a hand roller, using the right color of ink for the plates, and a few test impressions of the form were printed on several of the register sheets. These tests showed that nearly all the plates in the form on press had moved slightly out of their preset positions, and therefore, were out of register with the prints of the key-form on the register sheets. It was a comparatively easy matter for the pressman to correct the changed positions of the color plates, and finally, to have them set in precisely the right positions, ready for a long run.

Following this same procedure for all the various forms of color plates, the first two forms, for printing yellow and red, were placed on the two-color flat-bed cylinder press, and the makeready work was started. This makeready consisted of the usual patch-sheets designed to produce level printing from the surface of all plates in the form. The proper set of etched chalk relief overlays for the plates in this form were then attached to a hanger sheet of the packing above the patch-sheet makeready, but at first these overlays were not permanently pasted on, for this reason: On the smooth manila top-sheet of the packing several hundred bare impressions of the form of plates were taken (without ink). These impressions were for the purpose of pressing the overlays firmly and accurately into exact positions in the packing, and also into hair-line register with the surface detail of the plates, before printing the run. After the several hundred bare impressions had been taken, the top-sheet of the packing was raised, and by testing the present positions of the overlays with register marks, it was seen that a number of the overlays had moved to some extent so that they were not in true register with the engraved detail of the plates worked on them. These overlays were reset to proper positions, then all the overlays for the form were permanently secured. The same method, as described, was followed with all the other forms of plates including, of course, the key-plate forms.

This big job was completed as an excellent piece of color printing throughout with no loss in register. A comparison of time-sheet records proved that the entire work of printing was done in considerably less time than before, due to the elimination of trouble with register, a smaller number of press stops and greater ease in printing the process colors from the various forms of plates.

Simple Auditing System Cuts Costs

Success of System Is Dependent Upon Cooperation Received — Machines Must Be Kept in Good Operating Condition

By B. T. JUERGENS*

Mr. Juergens enumerates benefits of cost system installation. Cutting costs in the face of increasing expenses places executive in a difficult position.

DURING the past four years the average composing room executive has been "put on the spot." Added to the depression clamor for lower composing room costs and greater production for every dollar spent, is the problem of the greater expense in setting advertisements than ever before.

In the struggle to keep linage figures up, alert advertising managers are impressing their salesmen with the need for more elaborate and artistic layouts. Many salesmen and layout men have been bearing down on this angle, with the result that much advertising composition is now costing the

*Senior Foreman, *Muskogee Phoenix and Times-Democrat*, Muskogee, Oklahoma.

publishers from 10% to 30% more than in former years when advertisers were more easily pleased.

This places the composing room foreman or the mechanical superintendent in a difficult position, since he must cut costs in the face of increasing expenses. It sounds next to impossible, but there is an answer—a frequent but simple composing room audit that checks the production of every man employed. I know that such a system will work and will produce tangible results, because I have had it in operation for the past six months in the Muskogee *Daily Phoenix*

GETTING COOPERATION

Blessed is the man who is able to obtain departmental cooperation in spite of the pressure brought upon him to reduce his operating costs. Here is the written experience of a composing room superintendent who installed a cost system and through its use is able to obtain the cooperation which would have been impossible to get otherwise. We suspect, too, that the supervisor has ability to use successfully the information gleaned from the facts revealed by the system.—EDITOR.

(morning) and Muskogee *Times-Democrat* (afternoon) composing rooms.

The checkup each week has created a friendly rivalry among operators and floor men, and as each takes more interest in his capability, efficiency and production increases. This is especially true of the younger journeymen, those who have been turned out during the past ten or twelve years without sufficient training. Due to their inability to get work more than one or two days a week, many unconsciously have let themselves slip and have not worked often enough to reach a really efficient standard. With the weekly report on their production before them, added to friendly guidance, they are becoming better printers and at the same time better investments for the publisher.

A great number of the younger printers have been able to work several days a week during the past few months and the NRA and international five-day law have provided many more with additional work. For them an audit is an asset that works both ways, to the benefit of themselves and the publisher.

Many publishers are reluctant to sanction a cost system in the composing room where they have been using the obsolete method of dividing the weekly payroll by the number of pages to arrive at the cost per page. No doubt many publishers call for a monthly work sheet, not realizing that there are many loose ends in several departments that such a survey cannot cover or correct.

When I first considered a weekly audit system, it was discouraging because of the outlay necessary to print the four blank forms I had determined upon as necessary to the different departments. After studying all available systems, however, and simplifying them to the needs of a plant in a city of 32,000 population, I was able to group the forms and run them off on the newspaper press, thus cutting the initial cost more than two-thirds.

I was frankly skeptical of the benefits of an auditing system in a plant of this size, and received a good deal of adverse comment, both before and after instituting it. Nevertheless, it has proved successful beyond any expectations.

There has been an increase in production from 5% to 40% per man. Time spent on the correction and revision of proofs has been cut to a minimum, OK proofs being pleasingly frequent, with the operators "on their toes" all the time.

This, of course, presupposes that machines are in good condition and kept that way and that all departments cooperate to the fullest.

While the composing room is the largest department of any newspaper, and doubtless the most expensive, there are many leaks in its budget that can be attributed to other departments. In this connection, an authoritative style book has been placed in the hands of every editorial room employee, every advertising man and every printer. With reporters and desk men required to stick to the style, there are fewer "ringer" corrections than ever before, and everyone that is abolished means another line of real production.

With greater production, it has been a source of pleasure on these papers to know that we are not forced to use the amount of "block and tackle" time copy and office filler ads to make early editions on time, and editions are being made with time to spare in most cases. An efficient pressroom and stereotyping department can pull the composing room out of a hole sometimes, but carelessness in meeting deadlines will result eventually in missing the mails even if a minor stereotyping or pressroom breakdown develops.

Greater type production has meant fewer makeover pages for later editions and has eased the strain on stereotypers. Editors, assured of enough type to fill, are giving more time to makeup, and thus there are fewer editorials makeovers.

Directly or indirectly, all this can be laid to the accounting system. An added feature is that each proofreader keeps a check sheet of errors, machine, typographical and editorial. Thus, dirty proofs can be traced to their source at once and the trouble corrected.

An example of small but cumulatively important ways in which an audit has helped is the dropped use of the period after the day of the month in date-lines. When followed by a dash, this period is inessential, adds nothing to the appearance or clearness of the story.

Printers of the old school may disagree, but I have found that the additional motion required of an operator time after time, is appreciable. When the period in the date-line was eliminated, with a dash leading into the press service logotype, not even the editors noticed the difference until it was pointed out to them. This is just a sample of cutting the corners without loss of merit or efficiency.

I have an audit clerk who spends three days a week checking reports of operators, ad men, floor men, makeups, and proofreaders. The result shows what every employee has done in a given length of time. It is not only a valuable record but a sort of automatic fire alarm that points directly to the places where the flames of waste are consuming the budget.

Joins American Type Founders

American Type Founders announces Gilbert P. Farrar as Typographic Counsellor for the Corporation. Until recently Mr. Farrar held a similar position with Intertype Corporation. He will continue as Director of Typography for the Conde Nast Press, printers of Vogue, Vanity Fair, House & Garden, and many other well-known national magazines.

During the last five years Mr. Farrar has lectured on type before nearly all the Clubs of Printing House Craftsmen, many advertising Clubs and other groups such as schools of journalism and newspaper organizations.

With the American Type Founders Sales Corporation, Mr. Farrar will continue to fill engagements as a speaker on type for such organizations as are interested in the subject, and will render special service to the users of American Type Founders' products.

Sheet-Fed Intaglio Presses

General Printing Machinery Corporation, 29 Ryerson St., Brooklyn, New York, a subsidiary of the Mergenthaler Linotype Co., handles the sheet-fed intaglio presses manufactured by Linotype and Machinery, Ltd., of England.

These presses are made in three sizes: 25½ in. by 38 in., 21 in. by 28 in., and 11¼ in. by 18 in. The two larger sizes operate at a maximum of 2800 impressions per hour, while the smaller size operates at a maximum of 3000 impressions per hour. It is claimed that the presses are ruggedly constructed throughout to provide ample strength for the heavy impression required in intaglio printing.

The presses are designed to produce monochrome and multi-color work from thin copper plates which can be attached or detached from the machine in a few minutes. In practice, the thin copper plate is etched flat and then is wrapped around the printing cylinder and fastened by an ingenious bending and tightening mechanism.

Register gears of a special type and drop fingers are fitted to maintain exacting register.

The plate and impression cylinders are of equal size. The actual printing operation takes place on every first revolution of the cylinders and the sheet is delivered at the second revolution.

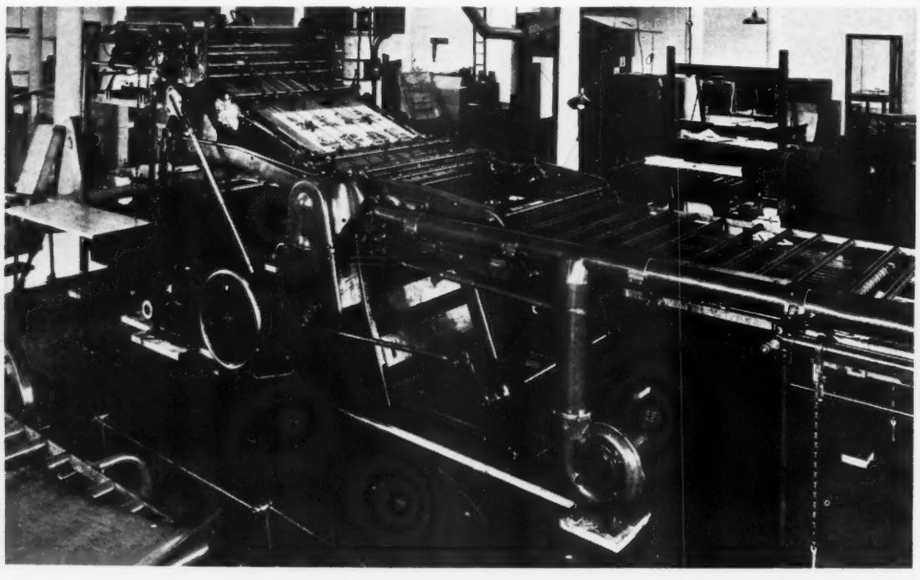
Sheets are delivered face up and are dried thoroughly before reaching the pile. Slip-sheeting, it is claimed, is unnecessary because an independently driven air drying apparatus extends over the full length of the extended delivery, including the jogger. The delivery moves intermittently and at each of the five stages each sheet comes to rest under a set of air pipes to receive a continuous current of air.

The doctor blade is supported by a rigid bar and the blade can be regulated while the machine is running. To increase the life of the plate, the pressure of the doctor blade is relieved on each second revolution of the plate.

Either spirit or water inks may be used. The inking roller is supported independently of the ink fountain but rotates completely inside the latter to deliver a steady flow of ink to the plate. Means are provided to lower the ink fountain vertically away from the inking roller and to lower it from the side of the press.

The presses are arranged so that feeders may be applied or they may be hand-fed.

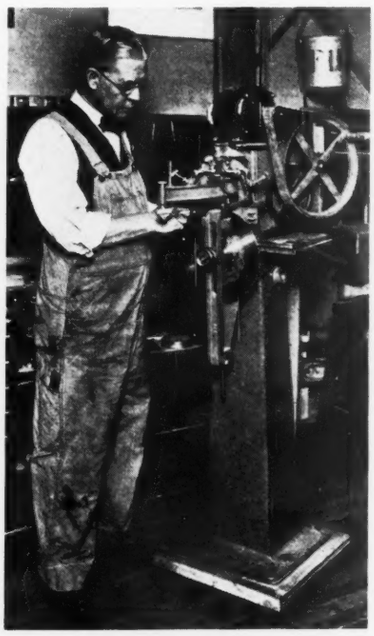
Futher information may be obtained from the General Printing Machinery Corporation at the address given above.



Foley Saw Filer

The Foley Automatic Saw Filer, which is made by the Foley Manufacturing Co., Inc., 11-15 Main St., Minneapolis, Minn., is designed to file band, hand and circular metal-cutting saws on the same machine. Saws from 3 in. to 24 in. may be sharpened on this machine.

In operation, the file is drawn across the tooth automatically with exactly the same pitch, bevel and pressure at each stroke to insure accuracy. A patented feature of the Foley Filer is that of feeding on the filed tooth, which the manufacturer claims provides for jointing the saw as it is filed. The machine operates under minimum motor power.



Foley Filer installation in the plant of Christian Science Publishing Company, Boston, Mass.

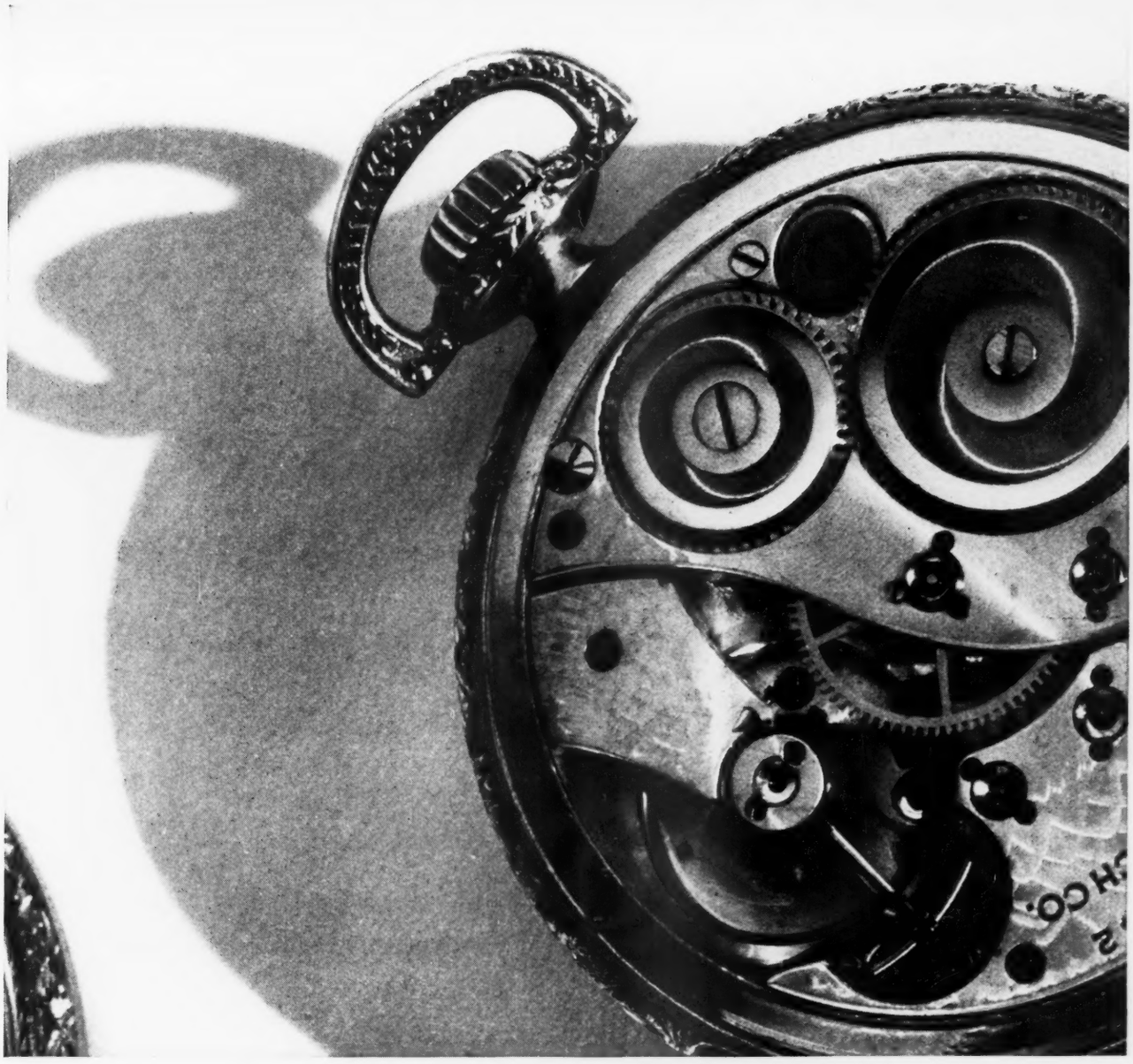
Further particulars may be obtained from the Foley Manufacturing Co., at the address given above.

"No Wurk-up"

Several home-made preparations have been used intermittently by the printing tarde to prevent work-ups in forms but these have several disadvantages and for that reason many shops do not use any work-up preventative.

Recently there has been developed a solution specifically compounded to prevent the working up of leads, slugs, quads, or spacing material while the form is on the press. It is known as No-Wurk-Up and is manufactured by The Rusticide Products Co. of Cleveland. It acts as a gripping agent to hold down imperfectly justified form elements. After slightly loosening the lock-up form, No-Wurk-Up is applied with a clean brush to the material which is working up.

It is claimed that No-Wurk-Up does not deteriorate in stock. Small samples are available which may be obtained by addressing The Rusticide Company, Inc., Cleveland, Ohio.



SHOOT THE WORKS!

6:59 P.M. On the stone in a New York composing-room are the forms of a 24-page booklet. Three million copies to be printed and delivered all over the country. 7 P.M., and the customer gives the proofs his final O.K. It is 1 A.M. A car dashes up to the airport and a package of electrotype shells is delivered to the pilot of the waiting plane. It is noon in Chicago. Three presses running on the job. By evening the San Francisco presses will be starting. Exceptional? Yes! But that's the way business moves today. Everything has speeded up. Nobody wants to wait. The customer demands proofs tomorrow morning. If you want the business, you have got to show speed. And speed without any sacrifice of appearance or accuracy. In the composing-room there's just one way to do good work fast . . . that's Linotype.

LINOTYPE

Linotype Bodoni Family

MERGENTHALER LINOTYPE COMPANY

29 RYERSON STREET, BROOKLYN, NEW YORK

Ludlow. . .

An Important Factor in Reducing Page Costs

The Ludlow system of setting display composition has been in constant use in our composing room for a period of more than ten years.

During this entire time, the Ludlows have never failed to meet every production requirement, both as to quality and quantity.

This continuous use of the Ludlow system has been our endorsement of its efficiency and economy of operation. The Ludlows have proved an important factor in the reduction of our page costs.

L. H. BUTLER, Superintendent
HARRISBURG TELEGRAPH

LUDLOW TYPOGRAPH COMPANY
2032 Clybourn Avenue + + + Chicago, Illinois

Set in Ludlow Tempo Medium, Tempo Bold and Mandate.

Adapting Layout to Limited Space

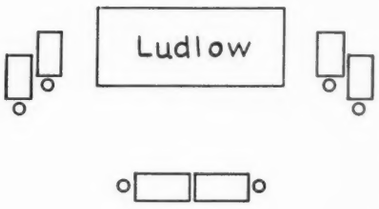
Accomplished in Newspaper Composing Room — Department and Equipment is Kept Free from Dirt, Grime and Grease

By E. G. Myers

Almost every large composing room boasts a genius of one kind or another, to whose credit are laid many of the time and labor-saving innovations which are later on accepted as standard in modern newspaper mechanical operation. One can go into most any of the larger newspaper composing rooms and find some one thing of outstanding merit designed for a particular need. I find in my travels through a large section of the South many of these innovations which are highly essential to the particular plant in which they have been adapted.

Perhaps one of the most finished composing rooms in the South is that of the *Times-Picayune* and New Orleans *States*. Here a collaboration of two minds in composing room conduct, working in harmonious cooperation has builded one of the most practical and efficient mechanical departments one can find anywhere. Frederick K. Forstall, mechanical superintendent, and George E. Downes, chief machinist, have pooled their genius and as a result several innovations fit into the scheme of operation.

Of outstanding import and impressiveness in this plant is its cleanliness. Floors, machines, walls, in fact, everything in the place are kept as spick and span as a housewife's kitchen.



Staggered arrangement of Ludlow matrix cabinets in the composing room of the New Orleans Times-Picayune. *Owing to limited space available for this equipment, it is felt by Mechanical Superintendent Frederick K. Forstall that maximum accessibility is afforded without cramping the operator's movements. In this plant, one compositor composes and casts all of the display material for ad composition.*

The line-composing machines are cleaned daily. Magazines are rubbed down until they shine like gold. Particularly deleterious as sea air is to nickelplating and bright parts of composing machinery, nevertheless the machines have the appearance of having been just recently shipped from the factory. At intervals one machine after another is taken in hand, bright parts are all removed, buffed down, replated and buffed again to a non-glare finish. While this process is under way, the machine is inspected. All worn parts are replaced, adjustments are made, and when the machine is returned to production it is the counterpart of a new machine. They're

kept modern, too. New devices are added if in any way the efficiency of the machine will be increased. As a result, here are Linotypes and Intertypes performing yeoman service twenty hours each day without breakdowns, and which require a minimum of attention from the machinist and helper. It's an obsession with both Fred Forstall and George Downes that dirt, grime and grease must be kept out of machines. "For," as Forstall says, "nothing is so hard on equipment as permitting it to accumulate dirt, to spill excess oil and grease or to be neglected. We spend our good money for good equipment; the manufacturers put their best into it; the bosses provide it for us, and it's our job to see that it is kept in operation. The *Times-Picayune* Publishing Co. gets about all the good out of its machines that the manufacturers built into them; and, believe me, when we dispose of a machine in favor of a new one it's not because that machine is worn out but because it has become obsolete under the rapidly changing conditions of modern newspaper-making."

Recently, the *Times-Picayune*, after absorbing the New Orleans *States*, found itself cramped for space. Its building, constructed some years ago, seemed all too small for its increased needs. Outwardly, a new building seemed imminent. But Forstall and Downes together with the building superintendent, pooled their wits and out of the conferences came innovations which make the composing room not only an efficient but a pleasant place in which to work.

To provide needed space a large washroom, located directly between the composing room and the stereotype department, was removed and placed in a penthouse on the roof. The washroom was connected by a steel one-flight stairway. Here the men have better facilities in the way of shower baths and locker rooms.

With the new arrangement there is no backtracking, retracing or doubling of steps. The work moves in one continuous line without friction or interference of one man with another.

The composing room arrangement of The *Times-Picayune* Publishing Co. is unique. The ad department with its separate machines, Ludlow and hand department is placed in the form of an L, the news machines and its complementary equipment, together with the head machines, being placed in the recess of the L. This permits the work to flow uninterruptedly and freely to the makeup department without retracing or backtracking.

In a recent rearrangement of the ad alley equipment minute attention was given to every detail. A staggered arrangement of the Ludlow Cabinets was adopted by placing them corner to corner instead of back to back or end to end. This is shown in the diagram. A number of cabinets are concentrated into limited floor space, and because of the limited floor space available it is felt that the arrangement is the best that could have been made. A new Ludlow has been installed with slotted mouthpiece combination, circulating mold cooling system, plunger spring regulator and other added features.

From its earliest installation the single-operator system has been employed on the Ludlow in the plant. One man handles and works up all the display instead of hand compositors using the machine indiscriminately. This eliminates congestion and speeds up work materially. Hand men confine their activities to assembling ad material, the line-composing and Ludlow material being delivered to them ready for assembling.

The proof-reading department, always a problem in a large newspaper composing room, was given consideration. After carefully going over the situation, the proofroom was spotted where it would not interfere with the general traffic, yet

We admire Prima Donnas but not Prima Donna mats

IT takes no coaxing, nor big bouquets to persuade a Certified Mat to perform superlatively.

You hear of notable mat results, sometimes, only to find out afterward that it took special handling of a mat from a "good shipment."

Certified Mats are not temperamental. Treat them right and they treat you right, day after day—month after month.

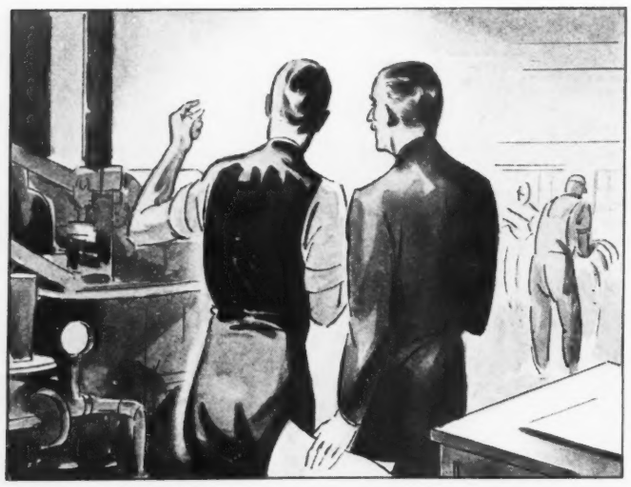
For dependable stereotyping rely on Certified Mats, made in the U. S. A.

●

CERTIFIED DRY MAT CORPORATION

338 Madison Avenue New York City

Certified DRY MATS



Imperialize Your Plant Now For Next Year

THIS is December — soon you will be getting figures on your metal costs for 1934. This month — now — is the time to make plans for lower metal costs for 1935. Imperialized plants — that is, plants that standardize on Imperial Type Metal Service — have the lowest metal costs.

Before January investigate the savings you can make by Imperializing your plant. Find out how you can eliminate metal and machine troubles, get cleaner and better impressions and more satisfactory metal service.

Imperial METAL

THE IMPERIAL TYPE METAL CO.
Philadelphia · New York · Chicago · Los Angeles

located accessibly to news and ad departments alike. Double windows were provided and the room was made noise-proof. Ventilation was installed also. A hexagon-shaped proof table was made. This was illustrated and described by Mr. Forstall in the June issue of *Printing* EQUIPMENT *Engineer.*

To provide for ad proofreaders, space was arranged along one wall separate from the news readers. An ingenious bank and lighting scheme was designed to facilitate work. The entire room is so pleasantly lighted that no matter where one sits there is no semblance of glare.

An automatic transmission system was built and installed for the purpose of carrying proofs and copy from the proofing department to the proof room. This will be described in an early issue of the *Engineer.*

Downes built steel guards about the saws, each of which is located so that adequate sawing facilities are provided for both the news and ad departments. Noiseless operation without flying metal bits is assured.

Another machine built by Downes, the machinist, is a proof press which takes an entire page on the turtle. This mechanism was also described in a recent issue of the *Engineer.*

It is common knowledge that Fred Forstall's composing room costs are lower than in any city of its size in the country. This is not without its reasons. Forstall is a stickler for good equipment. Then it must be kept in good shape. Next, he feels that the proper placing of equipment is of greatest importance so as to provide open and unobstructed aisles. The working room, also, must be a clean, airy and pleasant place in which to work.

In his day-to-day conduct of the mechanical departments Mr. Forstall keeps constantly in mind that in the long run equipment is the cheapest part of a newspaper plant provided it is conscientiously and judiciously selected, properly placed and supervised. Labor is the most expensive item with which one has to deal. Therefore, providing all the conveniences which make for contentment assures maximum production.

. . Packing

(Continued from page 8)

While it is customary to refer to the height of bed bearers as 0.918 in., which is the standard height of type, they are more often 0.916 in. high. The manufacturers of one of the most popular makes of presses have adopted a measurement of 0.9167 in. for bearer height. Bearers have been known to wear down to 0.914 in. and good work was still being done on such presses.

It is important that the packing on the cylinder should conform to the pitch-line and the bed bearers adjusted to form requirements.

If the cylinder has been properly packed in observance of the pitch-line, and the cylinder lowered in order to make proper impressional contact with the bearers off, and the bearers are then found to be too high to again be applied to the bed, it would be advisable to have them cut down to 0.915 in. If this gauge should prove to be too low it would be an easy matter to put one or more strips of writing stock under the bearers to give the proper contact.

And after all has been said and done, remember that good printing begins with the proper observance of the requirements of the pitch-line.

. . Rollers

(Continued from page 11)

"bakelite" is an example), and the Cumaron resins, the synthetic resin field had very little material with which to work. The artificial resin group, which is the most popular, includes phenol-formaldehyde products, Cumaron resin, glycerine and phthalic acid condensation products (glyptal), ketone resins, the products of polymerization of vinyl compounds, urea and thiourea derivatives and the sulphur-phenol resins.

A study of these resins with respect to their use in inker rollers reveals that very few by themselves are at all suited for this purpose. They are used to impart better oil resist-

CONGRATULATES US

December 1, 1934.

Printing EQUIPMENT *Engineer,*
Cleveland, Ohio.

Gentlemen:—Congratulations upon your masterful production of the 1935 Equipment and Supplies Reference Number. It is a wonderful achievement, indeed. It is most useful and instructive to any executive in the Graphic Arts Industries. I have heard much favorable comment.

ROBERT F. SALADE,
Philadelphia, Pa.

ance properties to the finished compound. Cumaron resin which is one of the important members of this group is used quite commonly but it is fairly soluble in oil. Phenol-formaldehyde resins are little used because of their lack of miscibility with rubber. Glyptal resins made by the condensation of polybasic acids with polyhydric alcohols offer little or no protection. According to Naunton, Jones and Smith (Transactions of the Institution of the Rubber Industry—Vol. 9—No. 3—pages 169-187), very soft plastic glyptal resins derived from ethylene—glycol and adipic acid with addition of a little glycerine and phthalic acid has been tried out for lithographic rollers. The above authors state, "that their oil resistance is good, but their manufacture takes a long time and their aging characteristics have still to be demonstrated."

The ethylene polysulfide resins (Thiokol) have been used to some extent as distributor rollers on Cottrell presses and the most serious drawbacks to this type of resin from our observations is its thermoplasticity and in some cases obnoxious odor. The glyptals, ethylene polysulfide resins and other resins mentioned above lack tackiness and resilience, very essential for form rollers of fine magazine and catalogue printing.

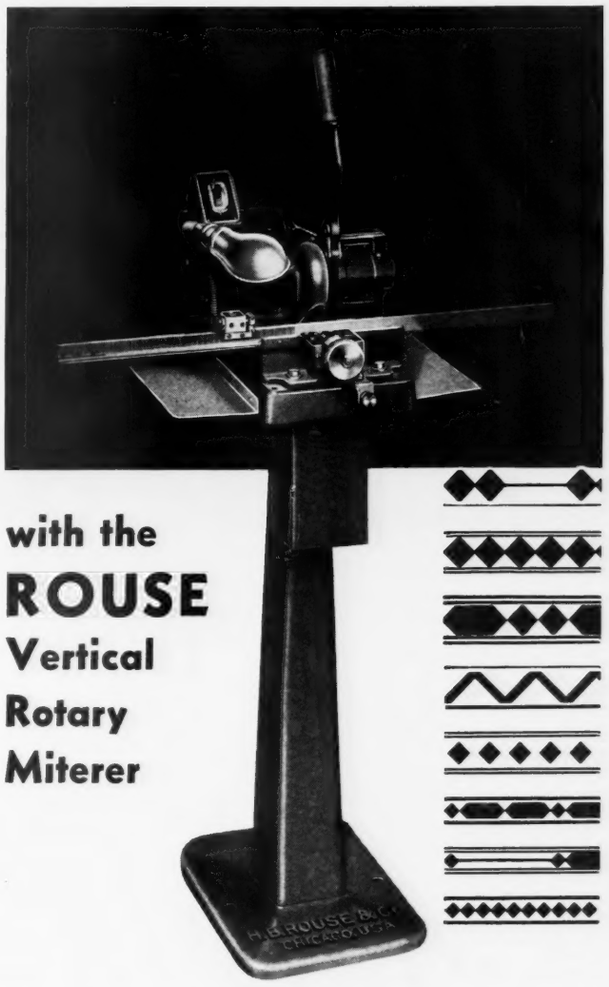
When compounded with rubber in normal proportions they do not improve the oil resistance of the finished vulcanizate, doubtless due to their lack of miscibility with natural rubber.

C.—A PERFECT INKING ROLLER DEFINED

At this point the question might well be raised as to what is a perfect inking roller. The answer could possibly be the same as was given for a perfect ink (Share Your Knowledge Review—July, 1934—page 8), substituting the word "roller" for the word "ink." A perfect printing roller would in all probability be considered as being a low-priced roller that would give satisfactory results under all conditions in all kinds of weather, in all temperatures, on any kind of stock, on any press with any kind of ink. But such a roller has never been made and neither has such an ink.

However, rollers are being made that can be used on presses for practically all known types of work that seem to meet any reasonable demand, that do more nearly approach

Minutes Against Hours



with the ROUSE Vertical Rotary Miterer

Where scores of miters are made daily there can be no substitute for the Rouse Vertical Rotary Miterer. It is a wonder-worker in the composing room, giving perfect miters and angle border combinations in an unbelievably short time. It does the work of hours in minutes.

A complete miter can be made in one operation without previous cutting of strip to length. The cut is visible to the operator. You see what you do. Gauge accurately sets by quarter points to 144 picas.

The Rouse Vertical Rotary Miterer is easy and safe to operate, and positive in accurate performance. It is sturdily constructed and built for years of service.

Details and prices await your request. Use the coupon or write on your letterhead.

Mail NOW for Complete Details

H. B. ROUSE & COMPANY
2216 Ward Street, Chicago, Ill.

Without obligation, please send complete information on the Rouse Vertical Miterer.

Name_____

Address _____

the perfect roller than has been possible previously. These types of rollers are of an entirely different type than has been commonly used heretofore, and are based on the synthetic materials discussed in this paper.

D.—RUBBER ROLLERS IN NEWSPAPER WORK

In the newspaper field the tendency in the past few years is more and more toward rubber rollers. The paper presented before this group last year (Rubber Rollers—Their Use and Care—Harry B. Adsit), covered this subject. What is still desired in a newspaper roller is expressed by Charles F. Hart in *Editor and Publisher*, July 14, 1934—"Can the Plasticity of Rubber Rollers for Presses be Standardized?", in which he states that a somewhat softer roller is desirable, still keeping the good properties of the present newspaper rubber rollers.

E.—THE NEW SYNTHETIC RUBBER ROLLER FOR FINE PRINTING

Outside of the newspaper field, while great progress has been made in the art of compounding and vulcanizing rubber rollers, the inherent nature of natural rubber to be attacked by the ingredients of the inks (and the better the grade of ink, generally speaking, the more destructive this action is) has caused rubber rollers to be almost completely eliminated from the printing of four and six-color magazines, catalogue printing, etc. The action of the various washes also as well as the inks, helps to prevent the use of rubber rollers in this field.

Recently the synthetic rubber roller has made its appearance. Synthetic rubber rollers (properly compounded and vulcanized) can be used on the finest screen work as form rollers. A more complete discussion will follow later in this paper.

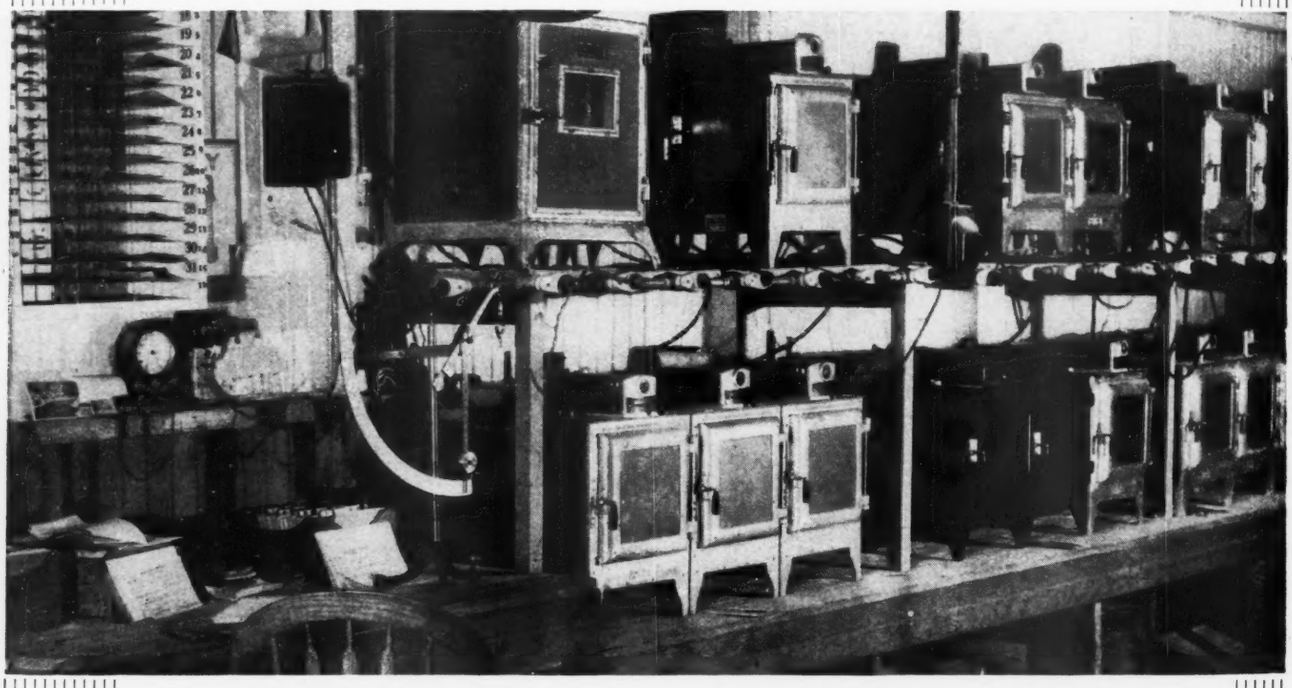
F.—CLASSIFICATION OF INKING ROLLERS

Information concerning inking rollers is regarded by roller manufacturers as trade secrets. A survey of the patent literature for the past twenty-five years reveals little information of value. For the purpose of classification the manufacture of inking rollers can be roughly divided as follows:

1. Glue-Glycerine.
2. Vulcanized Oil.
3. Synthetic Resins.
4. Natural Rubber.
5. Synthetic Rubber.

(To be Concluded in the January Issue)

The Picture Story of "Wood Dry Mats in the Making," No. 10



Shrinkage Control Assured by Oven Test

A BATTERY of automatic electric ovens, under the personal supervision of the conditioning room foreman, plays an important part in determining the amount of moisture contained in a dry mat. An air circulation system within the drying chambers provides a uniform temperature distribution that is maintained throughout all tests. By means of these tests we control accurately the dry mat shrinkage required by the various publications.

WOOD DRY MATS
ALWAYS UNIFORM

WOOD FLONG CORPORATION
HOOSICK FALLS, N. Y.

COMPARE IT!

WITH ANY OTHER SCORCHER ON THE MARKET!

Compare Results!
Compare Construction!
Compare Performance!
Compare Operating Cost!
Compare Durability!
Compare Service!
Compare Price!

Why pay high prices when the FORM-O-SCORCH produces finer work at less expense.

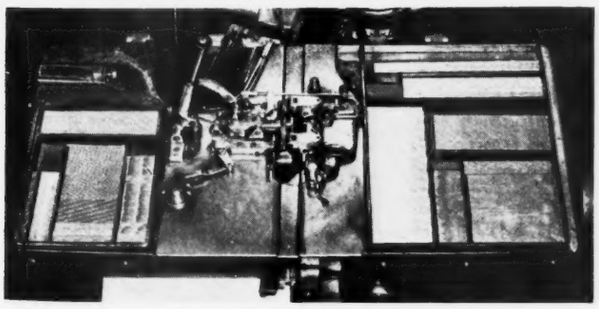
AMERICAN PUBLISHERS SUPPLY BOX 131, WEST LYNN, MASS.

Ludolw Table Top Slug Compartment Tray

By PETER S. GRANT, SR.*

THE saving of minutes in any composing room is something that should not be overlooked. Very often, some apparently inconspicuous operation, in the course of a year, may be the cause for the loss of considerable productive time.

At the Cleveland *News*, much time is saved our Ludlow operators through the use of frame or compartment trays in which are kept the various length slugs for underpinning and spacing purposes. The trays are of suitable size



for each side of the table and are divided into compartments for holding one, two, three, four and five-column material.

These trays were constructed from 1 in. wide channel iron, bent at the corners and welded for rigidity as shown in the accompanying illustration. The channel in the iron strips, of course, faces the outside.

It is my hunch that once Ludlow users adopt this plan for shortening those long reaches for underpinning and spacing material, they will not be without its minute-saving possibilities. The Ludlow operators, too, like the idea because of its convenience to them.

*Superintendent Composing Room, *The Cleveland News*.

Ohio Newspaper Executives Association

Several newspaper composing room executives met in Akron, Ohio, on October 13 and formed a temporary organization which will, in all probability, be named the Ohio Newspaper Executives' Association.

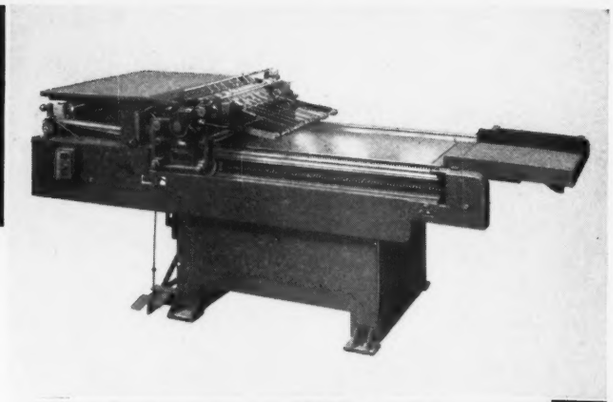
It will be the purpose of the association to meet semi-annually for the purpose of discussing production and mechanical problems. Any Ohio newspaper composing room superintendent, foreman or machinist will be eligible to membership.

John B. Hogan, superintendent of the Cleveland *Press* composing room and Ray Richardson of the Akron *Times-Press* composing room did most of the work incidental to the temporary organization. Mr. Hogan, who was designated temporary chairman, has sent a letter to composing room executives throughout the state.

ATFSC Acquisitions

Announcement is made by American Type Founders Sales Corporation of the outright purchase of a large proportion of the inventories of Wanner Company (Chicago), Kansas City Printers Exchange (Kansas City, Mo.) and Des Moines Printers Exchange (Des Moines, Iowa).

SELECTED by ALL MAJOR NEWSPAPERS in New York City

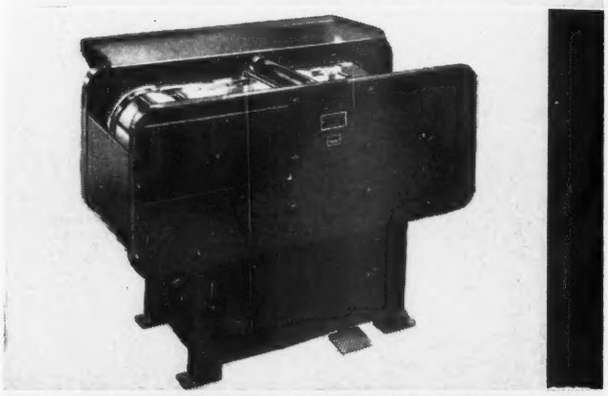


Where seconds count and minutes are vital, No. 325 A and No. 23 Vandercook Proof Presses have proved their efficiency. They are unexcelled for quality of work and speed. These presses are endorsed by leading production executives.

No. 325 A Vandercook Proof Press will print 1000 good proofs per hour — full newspaper page size, without printing stereotype chase. Smaller advertisements may be printed with equal ease.

No. 23 Vandercook Proof Press produces proofs up to six full columns at the rate of 40 per minute. Galleys of advertisements, large or small, are printed at the same speed. This high-speed press is equipped with special Vandercook impression cylinder and rubber rollers which insure good proofs from forms and galleys varying as much as .015 in height.

Catalogs, specifications and prices will be sent at your request. You should know about this efficient equipment even though you do not want to invest now.



VANDERCOOK & SONS, INC.
Originators of the Modern Proof Press
906 N. Kilpatrick Ave. Chicago, Ill.

Straight-Line Production

System Assures Efficient Handling of All Label Work Passing Through New Ever Ready Label Plant, New York

By STAFF WRITER

THE Ever Ready Label Corporation, with a record of over a billion N. R. A. labels produced to date, has occupied new quarters, twice the size of the old establishment. The new plant covers about 20,000 feet of space on the top floor at 141-45 East 25th St., New York, New York.

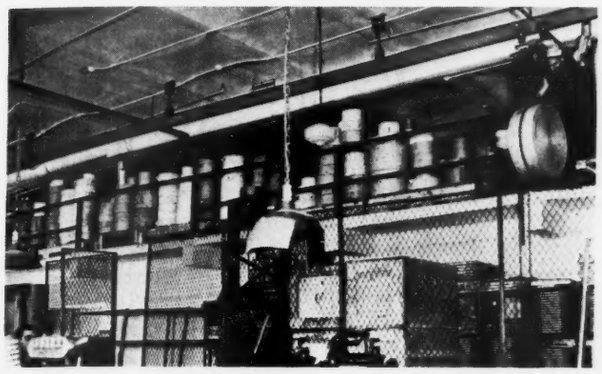
Production is at its highest possible efficiency due to a straight-line system of routing. Starting at one end of the pressroom which occupies 8350 ft. of space is the composing equipment. Immediately following in double rows are 15 one, two and three-color, high-speed New Era presses. At the end of this line-up are located Model B Kelly and Miehle Vertical presses, besides a specially built rotary press conceived by Ever Ready Label Corporation, as well as guillotines and die-cutting presses. Extensive cutting die racks, in addition to a battery of specially built winding machines, complete the essential plant equipment.

All orders enter through the factor office at one end and follow through composing and press sections to the opposite end of the floor where cutting and winding takes place to be succeeded by wrapping and packing in the shipping department which takes up most of the space at this end of the plant. Merchandise then leaves the building through freight elevators located at this point.

General view of part of the pressroom in the new plant of the Ever Ready Label Corporation, New York. Here Model B Kelly, Miehle Vertical and New Era Presses and other intricate machinery turn out the work.

There is little possibility of waste motion or temporary hold-up in production through this procedure. Just as in a

big auto assembly plant the goods move progressively forward until the raw materials are converted into the finished product. Sidney B. Hollaender, president of the Ever Ready Label Corporation, believes that most printers can increase the efficiency of their plants at least 20% by improved layouts. An additional paper stock supply area is located on a newly built-in steel and concrete mezzanine floor, containing 2200 sq. ft., taking up about two-thirds of one side of the pressroom, a length of some 70 ft. A specially constructed traveling hoist lowers additional paper stock to the main floor stock skids as needed.



Supply room on mezzanine floor in new plant of Ever Ready Label Corporation, New York. Notice the specially built traveling hoist lifting a a label roll.

Large windows on all sides of the pressroom plus a ceiling height of about 20 ft. as well as several skylights, keep the plant well lighted even on dull days.

The general sales, and private offices of the organization take up several thousand feet of space. They are decorated in early English style paneling and accommodate from forty to fifty employees.

Sidney Hollaender, president of Ever Ready Label Corporation, is conducting a mural contest for the purpose of providing murals for the reception room in the new plant offices. The murals will depict the history of label printing. Richard Bach, Metropolitan Museum of Art, New York; Arthur Crisp, noted painter, and Hildreth Meiers, vice president of the American Mural Painters' Society, will act as judges of the contest.

"Book of American Types"

The American Type Founders Sales Corporation has begun the distribution of a new type specimen book under the name of "Book of American Types." This new specimen book, is the first of its kind to be issued for general distribution by the American Type Founders in several years.

The new catalogue is bound in a bright red cloth cover that will make it easy to recognize and its two hundred and eight pages make it a comfortable volume to handle. This is a point that will be appreciated by the thousands of printers who will use it as a reference book.

Unlike its predecessors, this volume is devoted exclusively to type faces. There is no machinery or miscellaneous merchandise shown. These are to be treated in separate books, so that the final complete catalogue will be made up of several sections. Borders and ornaments are also omitted and very little space is given to examples of type display. The book was planned as an exhibit of modern typographic type styles without much effort to suggest uses for the individual designs.

BURGESS CHROME MATS

Recognition of Quality in Burgess Syndicate Mats

●

Commercial shops and newspaper Syndicates are recognizing Burgess Quality in the Chrome Syndicate Mat—are adopting it and now you may see—increasingly, day by day — your features, advertisements, etc., coming in on Burgess Syndicate Mats.

You will recognize the Syndicate Mat for its pliability, easy handling — yet holding its deep impression and giving a fine, smooth cast.

If you are not, as yet, receiving your flat work on Chrome Syndicate Mats, request them of your advertiser or agency.

●

BURGESS CELLULOSE COMPANY
FREEPORT, ILLINOIS

CHROME MATS
A Laboratory Product
A 202

Pacific Coast Representative, RALPH LEBER,
426 Polson Bldg., Seattle, Washington

BURGESS CHROME MATS

BURGESS CHROME MATS

BURGESS CHROME MATS

Hearing on Proposed Used Machinery Valuation Plan

THE Code Authority for the printing equipment industry, on November 13, submitted to the National Recovery Administration in Washington, D. C., a method of value determination for used machinery, and rules and regulations dealing with trade-in allowances.

Presentation was made during a hearing on the plan conducted by Assistant Deputy Administrator C. W. Cheney of the NRA, assisted by representatives of the various advisory boards. James E. Bennet, Secretary of the National Printing Equipment Company, Inc., 38 Park Row, New York City, submitted the plan on behalf of the Code Authority.

Some opposition developed with respect to the filing of "confidential information" with the Code Authority, where it might be secured by competitors, but this has been taken under advisement by the Deputy Administrator and staff.

"Adjustment of the problem of second-hand machinery has become necessary," said Mr. Bennet. The purpose of the plan," he explained, "is to get worn-out, obsolete and productively useless machinery off the market entirely."

Mr. Bennet explained to the assembled dealers and the Administration officers that the plan proposed by the Code Authority was very simple in nature. Under its provisions, he said, each dealer is required to file with the Code Authority "maximum trade-in allowances he considers appropriate for used machinery of his own manufacture," and will thereafter be bound to observe such allowances and make none in excess thereof. In the event a member of the industry does not also file maximum allowances for competitor's machinery, then he may not allow a greater turn-in value on old machinery than that filed by the manufacturer of the machinery.

Under the plan there will be no set rule or method for determining the value of the machinery in question. Each member of the industry is entitled to use his own method in arriving at such determination of value, as well as the trade-in allowance to be accorded on such machinery. The only restriction is that he is bound to observe such maximum allowances based on his own determination once filed with the Code Authority.

Mr. Bennet declared that there was a large percentage of the industry which already is complying with the principles contained in the proposed plan.

Under the plan, the method of valuation and the trade-in regulations, would be binding upon every member of the industry after approval by the National Industrial Recovery Board. Members are given 60 days from the approval of the Administration to file a schedule of their maximum trade-in allowances with the Code Authority. It is provided that schedules may be refiled at three-month intervals, and if the plan is found not to be workable may be canceled outright by the Administration following a hearing.

Following conclusion of the hearing, the Deputy Administrator advised the gathering that the proceedings would be given careful consideration and a speedy decision reached.

G. E. Dividends

The board of directors of General Electric Company at its meeting in New York November 23 declared the 149th dividend on common stock and the 49th dividend on special stock, payable to stockholders of record on December 28, 1934. The dividends on both common and special stock of 15 cents a share are to be paid on January 25, 1935.

EDES PHOTO-ENGRAVING

EDES SUPERFINE QUALITY ZINC

ZINC

THE STANDARD FOR MORE THAN 80 YEARS

ETCHES CLEAN AND QUICK

THE EDES MANUFACTURING CO., PLYMOUTH, MASS.

Sales Representatives

John H. Heimbuecher Metals Co., 514 No. Third St., St. Louis, Mo.
Gazzolo Drug & Chemical Co., 119 So. Green St., Chicago, Ill.
E. H. Walker Supply Co., Printcraft Bldg., Washington, D. C.
Selby Mohr 883 Mission St., San Francisco, Cal.
Thompson-Hayward Chemical Co., 2228 Blake St., Denver, Colo.
Thompson-Hayward Chemical Co., 909-2nd St. So., Minneapolis, Minn.
Metzger Photo Supply Co., 1091 So. Main St., Akron, Ohio
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Equipment and Technical Literature for Mechanical Executives

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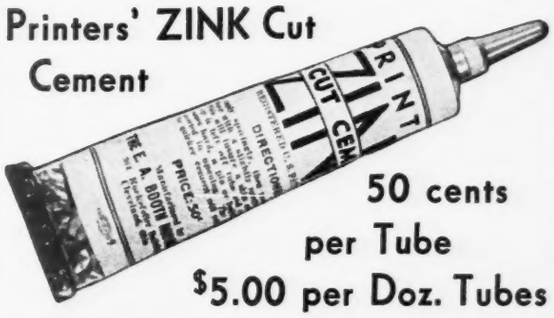

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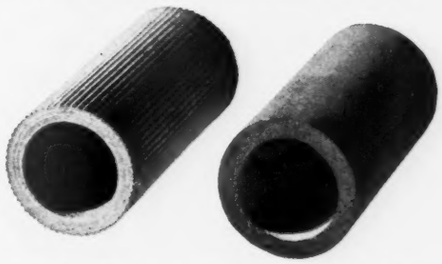

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Tough resistance to normal keyboard cam action and the positive gripping qualities have made these rolls increasingly popular. Colored green for your protection. Compounded in the laboratory to provide lasting resiliency and constant diameter throughout their length.

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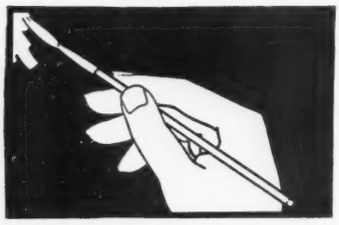

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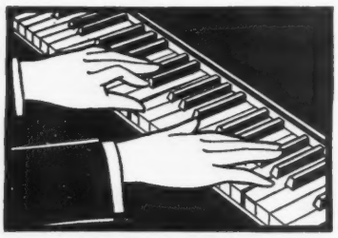

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Raising Stereo Plate Areas

Cylinder in Correcting Machine Provided with Series of Raising Plungers Operated by Hammer—Other Patents

NOVEMBER-DECEMBER

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Bookbinding:

1,980,267. BOOKBINDING. Frederick Charles Gould, Westway, Edgware, and Thomas Harrison, Golders Green, London, England, assignors to Nevett Limited, London, England, a company of Great Britain. Application July 26, 1933, Serial No. 682,320. In Great Britain January 26, 1933. 5 Claims. (Cl. 11 — 1)

1. Device for use in book binding, comprising in combination means for registering the stack of leaves of which the book is composed, means for clamping the stack, piercing knives for forming elongated slits in the stack close to the back edge, and lacing tools for passing lengths of tape through the slits.

Composing Machinery:

1,977,829. KEYBOARD. Jean Martial Lobit, Rosebank, N. Y. Application September 2 1931, Serial No. 560,715. 2 Claims. (Cl. 199 — 18.)

1. In an assembling mechanism for line-casting machines the combination of a bank of keys having a plurality of keys of different lengths, means pivotally supporting the keys intermediate their ends, rods attached to the keys for actuation thereby, there being one rod associated with each key, means counterbalancing the weight of the rods, the keys and rods being placed so as to be equally responsive to the same pressure applied to the different keys at different distances from their pivotal supports, and means determining the normal positions of the keys.

1,978,379. SPACEBAND STORAGE MEANS FOR TYPOGRAPHICAL MACHINES. Henry Borrmann, Brooklyn, N. Y., assignor to Intertype Corporation, Brooklyn, N. Y., a corporation of New York. Application January 31, 1934, Serial No. 709,230. In Germany August 12, 1933. 11 Claims. (Cl. 199 — 22.)

1. In a typographical machine having line assembling means, a plurality of spaceband boxes to contain relatively different sets of spacebands and one or another of which boxes is movable exchangeably into operative position to deliver spacebands to the assembling means.

1,978,775. METAL FEEDER. Joseph Autz Walker, Medford, Ore. Application November 30, 1931, Serial No. 578,094. 5 Claims. (Cl. 22 — 80.)

1. A metal feeder for use in typecasting machines, comprising a housing, adjustable brackets for supporting the housing in proximity to a melting pot, a feed screw slidable through the housing, rotary means for imparting sliding movement to the screw, a clutch for controlling the rotary means, a connection between the clutch and the melting pot for imparting rotation thereto, a float for controlling the degree of movement of the clutch, and a supporting means carried by the screw for suspending a metal pig in the melting pot.

1,980,110. SLUG CASTING MACHINE. Anthony J. Stouges, Queens Village, N. Y., assignor to Mergenthaler Linotype Company, New York, N. Y., a corporation of New York. Application June 19, 1931. Serial No. 545,398. 89 Claims. (Cl. 199 — 47.)

1. In a slug casting machine adapted to be equipped with matrices having casting edges devoid of mold engaging ears and formed in the edges with intaglio characters of different heights located thereon for common base alinement, the combination of a slotted mold whose contiguous face is adapted to contact with the casting edges of the matrices, means for supporting a composed line of matrices in casting relation to the mold in one or another of a series of different transverse positions according to the height of the matrix characters in use, and means for properly alining the matrix characters with the mold slot notwithstanding the absence of mold engaging ears on the matrices.

1,980,111. SLUG CASTING MACHINE. Anthony J. Stouges, Queens Village, N. Y., assignor to Mergenthaler Linotype Company, a corporation of New York. Original application June 19, 1931, Serial No. 545,398. Divided and this application January 31, 1933, Serial No. 654,557. In Great Britain January 25, 1932. 11 Claims. (Cl. 199 — 59.)

5. In or for a slug casting machine, slug trimming mechanism including, in combination, an adjustable right hand trimming knife, a left hand trimming knife, and means for moving the left hand knife to and from its active position, for the purpose described.

1,980,112. SLUG CASTING MACHINE. Anthony J. Stouges, Queens Village, N. Y., assignor to Mergenthaler Linotype Company, a corporation of New York. Application May 12, 1933, Serial No. 670,712. 29 Claims. (Cl. 199 — 49.)

1. In a slug casting machine adapted to be equipped with matrices of different forms, the combination of a holder for presenting a composed line of matrices in operative relation t the mold, and a set of interchangeable sections for adapting the holder to support matrice of the different forms.

1,980,421. TYPOGRAPHICAL MOLD. Harley J. Megley, Chicago, Ill. Application April 11, 1931, Serial No. 529,362. 42 Claims. (Cl. 199 — 55.)

1. In combination, a type casting mold adapted for casting a type slug and comprising jaw means movable into open and closed positions, the mold having type casting and type ejecting positions, driving means for moving the mold from each of the positions to the other, and means for positively closing the jaw means while the driving means is in full driving engagement.

Offset Lithography:

1,977,646. METHOD OF ETCHING PLANOGRAPHIC PLATES AND COMPOSITION THEREFOR. George S. Rowell, Cleveland, Ohio, assignor to Multigraph Company, Wilmington, Del., a corporation of Delaware. No Drawing. Application September 13, 1933, Serial No. 689,289. 8 Claims. (Cl. 41 — 41.5.)

1. A composition for etching and dampening planographic metal printing plates, comprising in aqueous solution an acid phosphate, ammonium nitrate, and nickel nitrate.

1,978,493. VACUUM PRINTING ELEMENT HOLDER. William C. Huebner, New York, N. Y. Application June 5, 1933, Serial No. 674,275. 15 Claims. (Cl. 95 — 76.)

1. A vacuum negative holder comprising: a base apertured for the passage of light therethrough; an outer wall associated with the base and extending therearound; a negative support correspondingly apertured for the passage of light therethrough and disposed within the outer wall in spaced relation thereto; and means, located between the wall and support and substantially flush with the wall, occupying and bridging the gap between the wall and the adjacent edges of a negative on the support in such effective amount as to prevent permanent deformation of a print-receiving element when subject to vacuum during exposure contact of a negative therewith.

1,980,287. METHOD OF PRODUCING COMPOSITIONS. Ashley G. Ogden, Miami, Fla., assignor to General Printing Ink Corporation, New York, N. Y., a corporation of Delaware. Application April 12, 1933, Serial No. 665,757. 11 Claims. (Cl. 95 — 4.5.)

1. In the art of preparing compositions, the method which comprises marking on a layout sheet the areas assigned to successive letters of a composition to form a predetermined layout, and projecting images onto a light-sensitive surface in accordance with the designations of the predetermined layout.

Platemaking:

1,978,559. PROCESS OF MAKING PRINTING SURFACES. William Zimmermann, Glendale, N. Y. Application May 4, 1933, Serial No. 669,326. 10 Claims. (Cl. 95 — 5.)

1. In the art of making printing surfaces comprising designs, a process which consists in producing a transparent reproduction of the design, diffusing a photographic negative of reduced size from the transparent reproduction by placing the reproduction and negative material a distance apart and subjecting the same to light, developing the negative material, then exposing a sensitized sheet in register with the diffused negative and a screen, removing the diffused negative and screen, and making a second exposure of the sensitized sheet through the transparent reproduction in substantially unreduced form overlying the first exposure.

1,978,784. METHOD OF PRODUCING MULTICOLOR PRINTS AND PRINTING PLATES THEREFOR. Theodor Dittman, Neumunster, Germany, assignor, by mesne assignments, to The Heinecke Company, Inc., New York, N. Y., a corporation of New York. Application June 9, 1932, Serial No. 616,246. In Germany June 12, 1931. 4 Claims. (Cl. 95 — 5.1.)

1. The method of producing multi-color printing plates, comprising making a negative of the print to be reproduced in colors, then making from the negative a transparent positive, and thereupon producing a certain number of color separation negatives by applying to a portion of a transparent member, while held in contact with the positive, corresponding to a certain color of the multi-color print to be made an opaque substance and repeating this operation with other transparent members for each color of the multi-color print to be made, exposing a corresponding series of sensitized photomechanical transparent plates successively through the members thereby producing a series of color separation negatives representing the various colors of the reproduction of the original print in colors, and exposing through the color separation negatives sensitized press printing plates corresponding to each color, and finally exposing the sensitized press printing plates through the above positive.

1,978,972. MACHINE FOR RAISING AREAS ON PRINTING PLATES. Isidor Tornberg, Plainfield, N. J., assignor to Wood Newspaper Machinery Corporation, New York, N. Y., a corporation of New York. Application May 12, 1931, Serial No. 536,720. Renewed April 4, 1934. 6 Claims. (Cl. 153 — 48.)

1. In a device for raising part of the surface of a stereotype printing plate, the combination of a cylinder mounted to be freely rotatable, means on the cylinder for holding a printing plate thereon, the surface of the cylinder under the printing plate being provided throughout with a series of small plungers, a shaft on the cylinder free to rotate independently of the cylinder, a hammer head radially and reciprocably carried by the shaft inside the cylinder, an arm fixed to the shaft and projecting over the outside of the printing plate, and an anvil carried by the arm in radial alignment with the hammer head.

1,980,069. PROCESS AND PLATE FOR COLOR PRINTING. Barnard J. Lewis, Brookline, Mass. Application December 24, 1930, Serial No. 504,645. 14 Claims. (Cl. 101 — 401.1.)

1. A process of preparing a printing plate, which consists in coating the surface of the plate at predetermined areas with a viscous, hard-drying medium to produce variations in the level of the printing surface, whereby the resulting print exhibits tonal values corresponding to the level variations.

1,980,443. METHOD OF MAKING INTAGLIO PRINTING PLATES. Oswald R. Schultz, New York, N. Y. Application March 3, 1931, Serial No. 519,712. 17 Claims. (Cl. 95 — 5.6.)

1. In the formation of intaglio printing plates from intaglio screened copy reliefs comprising making copy reliefs for intaglio printing which includes, photographing the object to produce in negative an object image on a photographic plate, retouching the object image appearing on the plate, blocking out the margins and uncolored portions of the object image, photographing the object image and a screen having opaque lines so that both the object image and the screen will be pictured on a second photographic plate with the object appearing thereon in positive, the opaque lines in negative and the blocked out portions of the object appearing unscreened, exposing a sensitized copy material through the second plate to the action of light, then treating the exposed copy material to produce thereon the copy relief, casting a hardenable plastic material onto the relief and thereafter stripping the same from the relief.

Printing Presses:

1,977,793. INKING MECHANISM. Michael Andrew Droitcour, Cleveland, Ohio, assignor to Harris-Seybold-Potter Company, Cleveland, Ohio, a corporation of Delaware. Application February 27, 1931, Serial No. 518,632. 11 Claims. (Cl. 101 — 357.)

1. In a printing press inking mechanism, a plurality of ink distributing rollers, means for vibrating same relatively to each other from zero to maximum, and a single mechanism including a releasable connection therefor for causing the roller surfaces to move in different paths during their vibrations.

1,977,812. MACHINE FOR CREASING, SLOTTING, AND PRINTING BLANKS. George W. Swift, Jr., Bordentown, N. J., assignor to George W. Swift, Jr., Inc., Bordentown, N. J., a corporation of New Jersey. Application May 3, 1933, Serial No. 669,156. 32 Claims. (Cl. 93 — 58.)

1. In a machine, the combination with a creasing and slotting unit comprising paired creasing elements and paired slotting elements cooperable in a common plane, a printing unit movable towards and away from the creasing and slotting unit, a second printing unit movable towards and away from the first-mentioned printing unit, each of the printing units comprising type and impression cylinders cooperatively arranged with respect to the common plane, intermeshing gears for revolving the creasing and slotting elements in unison with each other, measuring gears arranged respectively above and below the common plane, means for adjustably mounting one of the measuring gears on the lower cylinder of one printing unit, means for adjustably mounting the other measuring gear on the upper cylinder of the other printing unit, blank-feeding mechanism provided with feed rolls operable in the common plane and movable into and out of sheet delivery position with respect to the creasing and slotting unit, and means for adjustably timing the delivery of blanks from the blank-feeding mechanism to the creasing and slotting unit.

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In the old days a hard metal was expected to be slow etching and a glutton for acid. That was in the old days! Today, modern research and development have changed all that. Today we offer A-Z Alloy, a metal of unusual toughness and stamina, which melts with amazing speed in the acid bath.

Engravers tell us that A-Z Alloy etches just as clean and fast as its well-known brother — Zomo Electric Zinc. You can now order both these metals from any of the following: Rolled Plate Metal Co., National Steel & Copper Plate Co., Pacific Steel & Copper Plate Co., C. G. Hussey & Co., W. E. Booth Co., Ltd., Canada; Hunter Penrose, Ltd., England.

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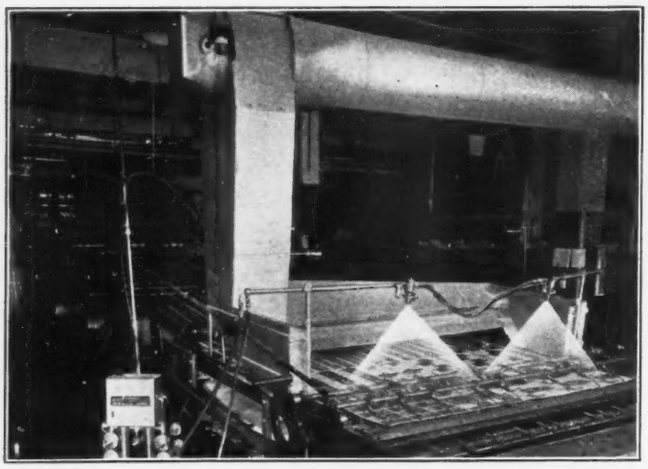

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PROTECT your printed impressions against all possibility of smudging or ink offset . . . do away with all need for slip sheeting, racking, or thinning inks — by equipping your presses for the Paasche "No-Offset" Process. Cost records show yearly savings of over $3,000.00 per press equipped. Over a hundred concerns installed the process last year.

Write today for booklet describing the operation, advantages and economies of the Paasche "No-Offset" Process, available for most types of presses.

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1931 DIVERSEY PARKWAY CHICAGO

Advertisers Demand Two Things . . .

. . . sharp, clean-cut printing of their type and cuts . . . space-bills that conform to the lineage ordered. Both are assured when the newspaper uses

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Their deep, clean-cut impression brings out the detail in halftones, electros, type . . . mill-conditioning controls the shrink within the exact limits desired. They scorch quickly . . . release easily without use of oil or powder.

If not already using them, write today for samples for test in your own stereo room.

MORLEY BUTTON
Manufacturing Company
PORTSMOUTH, NEW HAMPSHIRE
New York Office: 46 East 11th Street

1,978,073. TENSIONING MECHANISM FOR PRINTING PRESSES. Daniel Belcher, Minneapolis, Minn., assignor to Bemis Bro. Bag Co., Minneapolis, Minn., a corporation of Missouri. Application April 10, 1933, Serial No. 665,304. 13 Claims. (Cl. 101 — 228.)

1. In combination with a printing press comprising web feeding rolls, and printing and impression cylinders adapted to print a web fed intermittently between them, of rolls for applying tension to the web before and after the printing operation, the rolls having a common spring-actuated support mounted for swinging movement between the feeding rolls and the printing and impression cylinders, and means for limiting swinging movement of the support in one direction, comprising a movable element which also is operable to set the support into motion, each time the feeding operation of the web is initially started between the printing and impression cylinders, thereby to relieve the web of excessive tensional strains, the support being actuated entirely by the pull of the web thereon, after it has been initially set into motion by the limiting means.

1,978,285. INKING MECHANISM. Ernest James Smith, Fleet Street, England, assignor to The Goss Printing Press Company, Chicago, Ill., a corporation of Illinois. Application March 11, 1932, Serial No. 598,134. 7 Claims. (Cl. 101 — 350.)

1. An inking mechanism for printing presses including in combination a series of inking rollers for transferring ink to the plate cylinder of a printing press, means for supplying ink to the rollers including a pump, ink nozzles opening onto one of the rollers and having means for withholding the flow of ink until a predetermined pressure is attained and intermittently operated valves for interrupting the supply of ink to the press.

1,978,575. EMBOSSING MACHINE. Bernard Funk, Bronx, N. Y., assignor to Annex Manufacturing Co., New York, N. Y., a corporation of New York. Application September 9, 1933, Serial No. 688,747. 4 Claims. (Cl. 101 — 3.)

4. An embossing machine comprising a frame, a shaft rotatably mounted thereon, a pinion fixed to the shaft, means for rotating the shaft, a gear rotatably mounted on the frame and meshing with the pinion, an eccentric pin on the gear, a stationary platen mounted on the frame, a connecting link interconnecting the eccentric pin with the member, a rack bar mounted for sliding movement on the frame, pins attached to the bar and disposed on opposite sides of the connecting link and adapted to be contacted thereby during the operation of the machine for causing reciprocation of the bar, a roller rotatably mounted on the frame clutch mechanism connecting the roller with the racked bar, and means for declutching the roller from the racked bar, a second roller rotatably mounted on the frame and contacting the first roller and a flexible strip received between the platens and gripped between the rollers.

1,978,589. WEB DETECTOR FOR PRINTING PRESSES. Maynard D. McFarlane, New York, N. Y. Application October 3, 1932, Serial No. 635,984. 1 Claim. (Cl. 250 — 41.5.)

A safety device for highspeed printing presses consisting of a paper web detector comprising a photo-electric unit, an exciter unit in the form of an electric lamp for activating the photo-electric unit, the units being arranged in opposed relation on opposite sides of a paper web threaded through the printing press, housings for the units to enclose the same against contaminated atmosphere surrounding the units, opposed open conduits leading into the housings to provide a passageway for a beam of rays of light from the lamp to the photo-electric unit when the paper between the units is broken, and means to lead compressed air into the housings to cause a flow of uncontaminated atmosphere around the units and out of the conduits to prevent the contaminated atmosphere from depositing deleterious material on the units which would interfere with the proper activation of the photo-electric unit by the exciter unit.

1,978,715. ROTARY WEB PRESS. Otto C. F. Meisel, Milton, Mass. Application February 16,1933, Serial No. 657,030. 3 Claims. (Cl. 101 — 228.)

1. In a press in combination with rotary printing means, means for feeding a web to and from the same at speeds less than the surface speed of the plate cylinder, looping mechanism, driving means for effecting during a revolution of the cylinder a uniform motion in one direction and an intermediate retracting motion, and adjustable means for transmiting the motion in desired ratio to the looping mechanism.

1,979,093. SIGNATURE HANDLING MECHANISM FOR PRINTING PRESSES. Howard M. Barber, Pawcatuck, Conn., assignor to C. B. Cottrell & Sons Company, Westerly, R. I., a corporation of Delaware. Application February 1, 1933, Serial No. 654,624 6 Claims. (Cl. 270 — 71.)

1. In a machine, a folding cylinder, and positively driven rotary brushes located at the under side of the cylinder and engaging the margins only of the signatures for smoothing them out as they pass around the under side of the cylinder.

1,979,153. CARD OR SHEET FEEDING MECHANISM. Joseph M. Guenther, Buffalo, N. Y. Application January 6, 1934, Serial No. 705,555. 3 Claims. (Cl. 271 — 32.)

1. A sheet feeding machine comprising a supply magazine adapted to support a stack of sheets, an abutment arranged transversely in front of the magazine, a reciprocating pneumatic gripper movable lengthwise for carrying sheets from the front of the magazine to the abutment, a suction tube carrying the gripper and communicating therewith, means for alternately exhausting air from the tube for causing the gripper to hold a sheet and breaking the exhausting effect to release the sheet from the gripper, positive means for moving the tube forwardly, and resilient means for moving the tube backwardly.

1,979,316. FOLDING MECHANISM. Curtis S. Crafts, Oak Park, Ill., assignor to The Goss Printing Press Company, Chicago, Ill., a corporation of Illinois. Application November 11 1931, Serial No. 574,257. 5 Claims. (Cl. 270 — 77.)

1. A folding mechanism including in combination a folding cylinder having sheet taking and folding devices, and sheet stripping means positioned beyond the normal position of the head of the sheet in folding off position including a rod extending lengthwise of the cylinder and mounted for pivotal movement toward and away from the cylinder and stripping shoes mounted on the rod and extending away from the cylinder and means for normally holding the stripping means against the pivotal movement.

1,979,640. MARKING, PRINTING AND EMBOSSING MACHINE. Edward Roberts, Jr., Hohokus, N. J., assignor to Roberts, Cushman & Company, New York, N. Y., a corporation of New York. Application July 27, 1933, Serial No. 682,491. 24 Claims. (Cl. 41 — 7.)

1. In a printing or stamping machine, a base, at least one rotatable printing wheel having peripherally projecting type characters mounted on a stationary axis above the base, a fixed guide between the base and the printing wheel, a work support and a bar fixed at its upper end thereto vertically movable in the guide, spring means yieldingly urging the work support downwardly to a normal position with respect to the printing wheel, and manually operable cam means mounted on the base coacting with the lower end of the bar to move the support upwardly and dispose the work thereon in impression-receiving relation to the printing wheel.

1,980,188. PRINTING MACHINE. William L. Cullen, Dearborn, and Simon Roth and Carl Hoefler, Detroit, Mich. Application May 16, 1932. Serial No. 611,658. 7 Claims. (Cl. 271 — 74.)

1. Sheet feeding means including a roller, means tangent to the roller for guiding a sheet to the periphery of the roller, means for conveying a sheet to the guide means, means tangent to the roller for guiding a sheet from the periphery of the roller, and means for causing a sheet discharged onto the roller from the first mentioned guide means to become engaged with the last mentioned guide means, including means within the roller successively attracting and repelling the sheet.

1,980,386. MEANS FOR MOUNTING PRINTING SURFACES. Arthur B. Davis, Springfield, Ohio. Application December 14, 1931, Serial No. 580,887. 19 Claims. (Cl. 101 — 415.1.)

1. The combination with a support in a printing press and a printing sheet having a type face and fastening elements along two of its opposite edges, of a plate separate from the support for backing a portion of the sheet conforming to the surface contour of the support and adapted to be secured adjustably to the support, the plate providing fastening means engageable with one of the elements, a second plate for backing the remaining portion of the sheet and having one edge adapted for engagement with the other of the elements, the last mentioned plate being arranged to swing toward and away from the support to stretch the sheet over the backing surfaces and release the tension thereon without disturbing the position of the first mentioned plate relative to the support.

1,980,639. INKING APPARATUS AND METHOD OF OPERATING THE SAME. Alfred Schlesinger, Berlin, Germany, Application March 7, 1932, Serial No. 597,362. In Germany July 16, 1929. 6 Claims. (Cl. 101 — 350.)

1. An inking apparatus, comprising a member for supplying ink, a main rubbing apparatus comprising an ink receiving member, a subsidiary rubbing apparatus, comprising rollers, means for bodily moving the subsidiary rubbing apparatus from the ink supplying member to the receiving member for transmitting ink from the supplying member to the receiving member, and means for rotating the rollers with a circumferential velocity different from the velocities of the ink supplying and ink receiving members.

1,980,879. PAPER ROLL STAND. Oscar Charles Roesen, Brooklyn, N. Y., assignor to Wood Newspaper Machinery Corporation, New York, N. Y., a corporation of Virginia. Application February 9, 1931, Serial No. 514 522. 7 Claims. (Cl. 242 — 64.)

1. In a paper roll stand, the combination of a rotary frame, pairs of arms for supporting a paper roll between them, the arms being supported by the frame and means mounted on the frame for moving the arms independently of each other.

1,980,968. INKING MECHANISM FOR PRINTING PRESSES. Abel Kluge and Eneval Kluge, St. Paul, Minn., assignors to Brandtjen and Kluge, Inc., St. Paul, Minn., a corporation of Minnesota. Application December 30, 1932, Serial No. 649,568. 25 Claims. (Cl. 101 — 342.)

1. In a platen press having a revoluble inking disk, ink distributing rollers and form rollers alternately movable to and from onto and across the disk and back again away therefrom, means for imparting a turning movement to the disk at that stage in the cycle of the press when the distributing rollers and form rollers are both out of contact with the disk and means for arresting such movement of the disk at the stage in the press cycle.

1,980,969. METHOD OF INKING PRINTING FORMS. Abel Kluge and Eneval Kluge, St. Paul, Minn., assignors to Brandtjen and Kluge, Inc., St. Paul, Minn., a corporation of Minnesota. Application December 30, 1932, Serial No. 649,570. 9 Claims. (Cl. 101 — 338.)

1. The method of inking a printing form, through an inking roller movable back and forth over the form and over an ink-plate, to procure different zonal apportionments of ink at the form, the method comprising the steps of successively applying ink to the ink-plate in apportioned quantities in zones extending lengthwise in the direction of travel of the inking roller and of such lateral dimensions and relative disposition as to accord with the desired zonal apportionment of ink at the form, intermittently moving the ink-plate step-by-step, and regulating the extent of movement of the ink-plate at each step to promote uniformity in the distribution of ink in the different zones of the ink-plate and on corresponding portions of the roller and form, without substantially affecting the development, at the form, of zonal apportionment of ink at the ink-plate.

Rotogravure:

1,979,086. ROTARY COPPER-PLATE PRINTING PRESS. Friedrich von Heinrich, Budapest, Hungary, assignor of one-half to Hungarian National Bank, Budapest, Hungary, a corporation of Hungary. Application June 17, 1931, Serial No. 544,951. In Germany December 29, 1930. 9 Claims. (Cl. 101 — 156.)

1. In a rotary copper plate printing press, a plate cylinder to receive the printing plates, an impression cylinder operatively associated with the plate cylinder, a paper damping device associated with the impression cylinder, a feed table, a conveyor mechanism operating to carry the paper from the feed table about the impression cylinder to be moistened by the damping device and then to receive an impression between the plate and impression cylinders, an inking device applying ink to the printing plates, a pressure arrangement to distribute the ink over the plates, wiping devices beyond the pressure arrangement to remove the excess ink from the plates and a delivery mechanism to receive the print from the conveyor.

Miscellaneous:

1,977,805. PRINTING OF CHARTS. Joseph Neumann and Rudolph Neumann, New York, N. Y. Application November 17, 1933, Serial No. 698,412. 3 Claims. (Cl. 101 — 426.)

1. A method of printing both sides of circular charts having a plurality of relatively closely spaced circular graduations on both sides, the registry of which cannot be readily determined by looking through the chart when held up to the light, the chart being particularly designed for dial recording instruments, the method being for the purpose of assuring that the circular graduations shall substantially exactly register which comprises forming on the charts a series of spaced right-angle corners at intervals of 90 degrees and positioned substantially to the outside of the circular graduations, which corners are made of lines tangent to the outer circular graduations, the printer in printing the charts on the reverse side making certain the corners are in exact registry on the front and back of the chart by holding the chart up to the light during the printing operation.

1,978,275. METHOD OF AND APPARATUS FOR FINISHING RUBBER ROLLS. Noah E. Morrison, Lititz, Pa. Application November 20, 1933. Serial No. 698,900. 3 Claims. (Cl. 18 — 5.)

1. A machine comprising a lathe bed, a work holder adjustable on the bed, a chuck rotatably carried by the bed, a feed screw journaled longitudinally of the bed at one side, driven connections between the chuck and the feed screw, a carriage operated upon by the feed screw, an adjustable platform on the carriage, a heating mangle journaled upon the platform for action upon a rubber roll when supported in the chuck and work holder, and means for rotating the mangle.

1,979,045. PRINTING DEVICE. Otto B. Meyers, Quakertown, Pa., assignor to Markem Machine Company, Keene, N. H., a corporation of New Hampshire. Application April 20, 1932, Serial No. 606,311. 15 Claims. (Cl. 101 — 110.)

1. In a printing device, a rectangular frame, a bar parallel to one side of the frame, the ends of the bar having sliding engagement with opposite sides of the frame, a member between the bar and the first-mentioned side of the frame, the member comprising a central core, the opposite ends of the core providing clamping surfaces, a type-bearing element rotatably mounted on the core, the element having a plurality of faces and type mounted on some of the faces, and means for clamping the core between the bar and the first-mentioned side of the frame, the thickness of the core being greater than the thickness of the element whereby there is clearance between the element and the bar and first mentioned side when the core is clamped between the latter so that the element is free to rotate on the core.

1,980,502. MITERING MACHINE. Harry B. Rouse, Chicago, Ill., assignor to H. B. Rouse & Company, Chicago, Ill., a corporation of Illinois. Application February 19, 1932, Serial No. 594,005. 4 Claims. (Cl. 90 — 15.)

1. In combination, a reciprocably mounted head having a cutter, a support for positioning a strip in the path of the cutter and arranged whereby the strip is cut cross-wise thereof, the support mounted adjustable toward and from the path of the cutter for regulating the depth of cut to be made in the strip in producing connected or severed strip sections, a clamp element movably mounted on the support and arranged for clamping the strip thereon, a lever pivotally mounted on the support for operating the clamp element and having a free end portion normally extending substantially parallel to the direction of adjustable movement of the support, a movably mounted operating element having slidable contactual connection with the lever end portion and arranged for operating the lever, and means providing a resilient operable connection between the head and the operating element whereby when the head is moved toward the support the clamp element is resiliently applied substantially under a given pressure at various adjustments of the support.

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Reduces Associate Membership Dues

Allied trade associations are now eligible for associate memberships in the National Printing Equipment Association, Inc., at annual dues of no more than $9.00 for each unit of ten employees, according to a resolution adopted by the N. P. E. A. Formerly annual dues for associate members were $25.00 for each unit of ten employees.

James E. Bennet of the Babcock Printing Press Manufacturing Company is secretary of the N. P. E. A.

The National Printing Equipment Association, Inc., has endorsed the movement to increase the consumption of printing by appointment a committee of its own to work with committees to be appointed by associated organizations.

The N. P. E. A. committee consist of Joseph T. Mackey, treasurer of that organization and executive vice president of the Mergenthaler Linotype Company, chairman; Fred S. Tipson of the T. W. & C. B. Sheridan Company, and Edward J. O'Hayer of the Miehle Printing Press and Manufacturing Company, with Arthur Bentley, president of the Miehle Company and president of the N. P. E. A., an ex-officio member of the committee.

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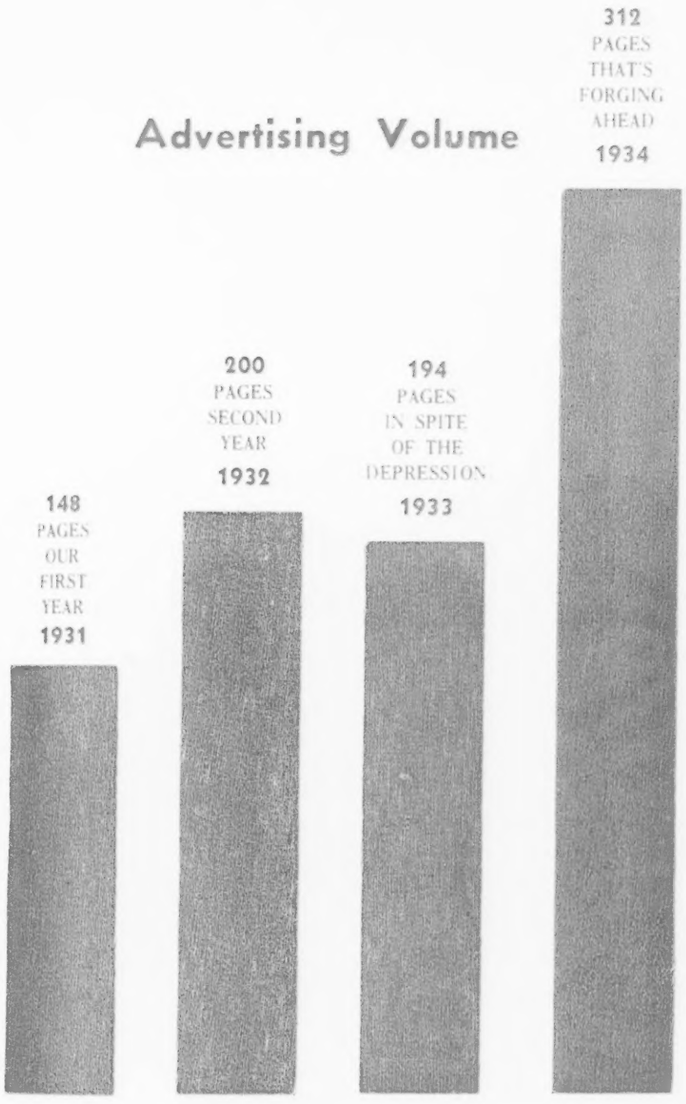
FORGE AHEAD WITH
Printing **EQUIPMENT** Engineer



Our Success Rests in the Success of Our Advertisers

[and our advertisers' success rests in the quality of our editorial content and the fact that Printing EQUIPMENT Engineer reaches the printing, mechanical and production executives the real buyers of the industry.

In 1934 Printing EQUIPMENT Engineer carried 312 pages of printing equipment and supplies advertising (exclusive of paper). Notice by the chart how Printing EQUIPMENT Engineer is forging ahead. Compare this volume of equipment and supply advertising with that of any other magazine in the field. The reason for this growth is obvious. Printing EQUIPMENT Engineer reaches 7,000 hand-picked Production and Mechanical Executives — men who recommend, specify, or purchase printing equipment and supplies. In other words, the "real buyers of the industry," men your salesmen call upon, in the commercial, newspaper, magazine and private printing plants.

START YOUR CAMPAIGN IN JANUARY

All signs point to much improved business conditions in the months ahead. Unquestionably there will be more money released for the purchase of equipment and supplies in 1935 than in the last few years. If you want your share of the dollar spent for new equipment and supplies, use a consistent campaign in Printing EQUIPMENT Engineer starting with January. Write today for rates or other information.

Printing EQUIPMENT Engineer

1370 Ontario Street, Cleveland, Ohio

Keyboard and hand composition
are now combined in one single
all-slug system on any Intertype